DOCUMENT RESUME

ED 469 708 CE 083 917

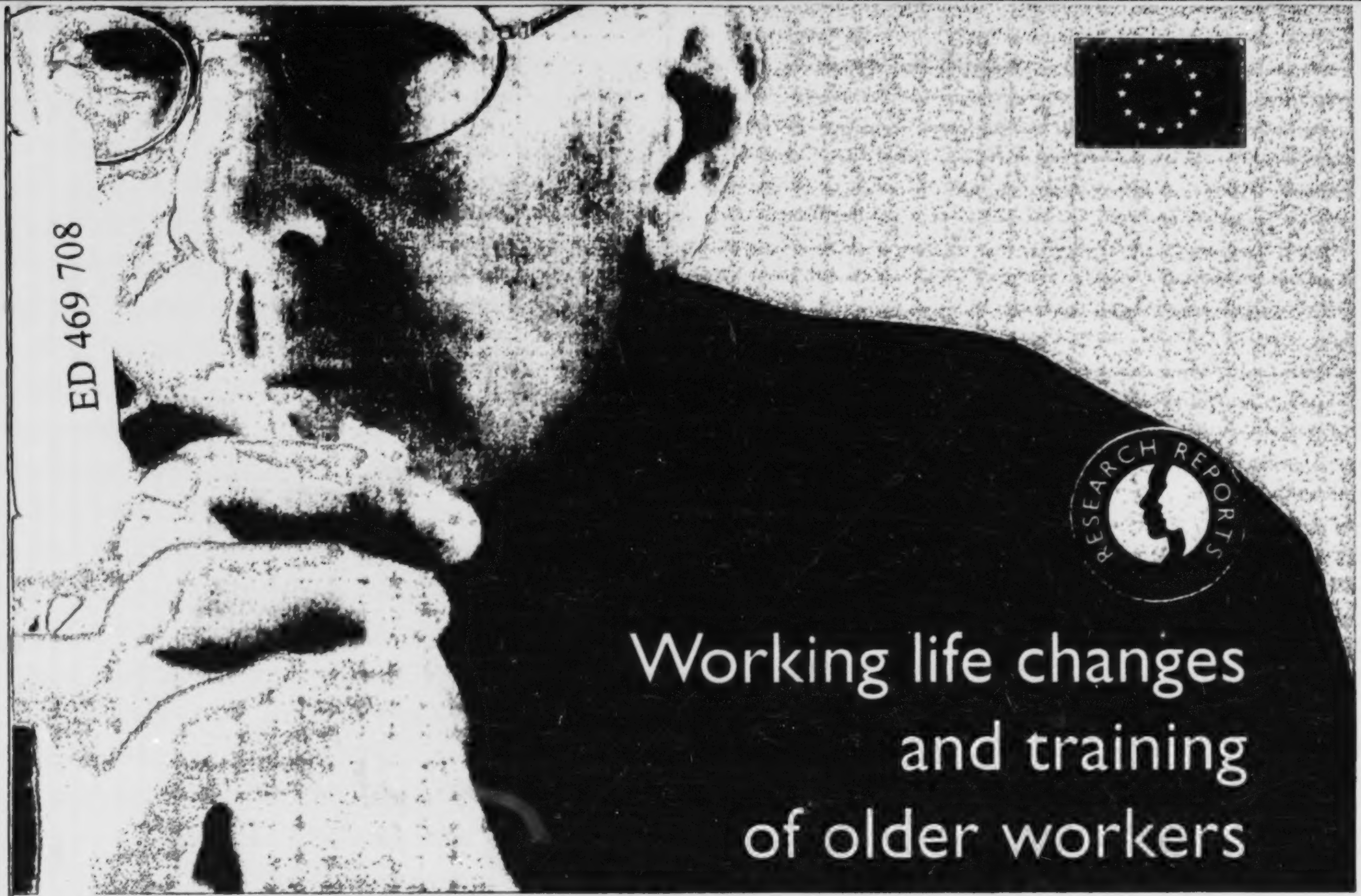
AUTHOR	Tikkanen, Tarja; Lahn, Leif Christian; Withnall, Alexandra; Ward, Peter; Lyng, Kolbein
TITLE	Working Life Changes and Training of Older Workers. Research Report.
INSTITUTION	Norwegian Inst. of Adult Education, Trondheim.; European Commission, Brussels (Belgium).
ISBN	ISBN-82-7724-039-2
PUB DATE	2002-00-00
NOTE	131p.
CONTRACT	TSER-SOE2-CT97-2016
AVAILABLE FROM	VOX, Nedre Bakklandet 60, N-7014 Trondheim, Norway (225 Norwegian Kroner). Tel: 47-73 99 08 40; Fax: 47-73 99 08 50; e-mail: vox@vox.no; Web site: http://www.vox.no.
PUB TYPE	Books (010) -- Reports - Research (143)
EDRS PRICE	EDRS Price MF01/PC06 Plus Postage.
DESCRIPTORS	Action Research; Adult Education; *Adult Learning; Age Differences; Case Studies; *Competence; Educational Research; Employee Attitudes; Employer Attitudes; Employer Employee Relationship; Foreign Countries; Informal Education; Information Technology; Inplant Programs; Intergenerational Programs; Job Skills; *Labor Force Development; Learning Motivation; Lifelong Learning; Off the Job Training; Older Adults; *Older Workers; *On the Job Training; Organizational Change; Outcomes of Education; Small Businesses; Vocational Evaluation; *Work Environment
IDENTIFIERS	Finland; Norway; United Kingdom; *Work Based Learning

ABSTRACT

WORKTOW was a multidisciplinary action research project carried out in 27 small and medium-sized enterprises in the United Kingdom, Finland, and Norway. The main focus was on the learning of workers aged 45 and older. In-depth case studies were conducted in all three countries involving a range of learning interventions. Results showed age was not related to how stimulating workplaces were experienced as learning environments nor to subjective assessment of learning attitudes, skills, or motivation. The job competence of older workers was generally highly valued but not systematically monitored or recorded. Changes in working life and workplaces stimulated learning and reduced opportunities for it for all age groups. Introduction of information technology was the greatest learning challenge to older employees. In terms of human resources development, older employees participated in informal and nonformal training in the same way as younger workers, but to a lesser extent in formal training. Case studies showed successful work-based learning and training interventions involving older workers had the potential to improve learning motivation, strengthen self confidence and organizational commitment, and improve the social climate in groups with mixed ages. Conclusions indicated the need to acknowledge workplaces as learning environments; develop more systematic measures for broad-based job competence assessment; and implement an integrative, intergenerational approach to learning. (Contains 143 references.) (YLB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 469 708



Working life changes and training of older workers

Tarja Tikkanen, Leif Christian Lahn,
Alexandra Withnall,
Peter Ward & Kolbein Lyng

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL HAS
BEEN GRANTED BY

R. Lofthus

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

VOX
Voksenopplæringsinstituttet

CE 083 917

BEST COPY AVAILABLE

Tarja Tikkanen, Leif Christian Lahn,
Alexandra Withnall,
Peter Ward & Kolbein Lyng

Working life changes and training of older workers

ISBN 82-7724-039-2
Trondheim 2002

IV Framework Programme, European Commission
TSER SOE2 CT97 2016

Abstract

WORKTOW was a multidisciplinary action research project carried out in 27 small and midium sized enterprises (SMEs) in industry, service and office-work sectors in the UK, Finland and Norway. The aims were to investigate how to recognise, value and utilise job competence; aspects of learning at work; HRD practices involving older workers and the facilitation of lifelong learning; and how the diversity of the workforce can facilitate the development of learning organisations.

In-depth case studies were carried out in all three countries involving a range of learning interventions. Results showed that age was not related to how stimulating workplaces were experienced as learning environments, nor to the subjective assessment of learning attitudes, skills, or motivation, except for memory and speed of learning. Stronger variation was found between sectors and companies.

- job competence of older workers was generally highly valued although it was not systematically monitored or recorded.
- changes in working life and in the workplaces tended both to stimulate learning and to reduce opportunities for it for all age groups.
- introduction of IT was the greatest learning challenge to older employees but this was not universal.
- in some cases of small businesses older workers, especially those with higher levels of education and expertise, did not find their work as stimulating in terms of new learning as their less experienced colleagues did. Coupled with scarce career opportunities, this situation sometimes led to estimations of low value and meaningfulness attached to training related to one's current job.
- in terms of human resources development, older employees participated less than younger colleagues in formal training within industry but there were no differences in participation in informal and non-formal training and in service and information sector. In some cases, the learning interventions were successful in helping managers to reframe the situation of older workers and learning in general but only where managers were receptive and could see the relevance for everyday practice.

A number of conclusions were drawn from the study, including the need to acknowledge workplaces as learning environments; the need to develop more systematic measures for broad-based job competence assessment; the need to encourage employers and older workers themselves to accept some responsibility for ensuring they have access to learning and training opportunities; the need to pay more attention to practical training outcomes and their implications for motivating highly experienced workers further in small businesses. It was also noted that strategies could be developed to enhance the strong sense of inter-generational solidarity observed in some workplaces and to capitalize on the complementary skills of workers of different ages.

Overall, responding to the new learning imperative in working life and utilising the diversity of the workforce presents a challenge to the competence of management especially in older occupations and companies. One way forward would be to strengthen investment and effort in developing more local learning networks and to assist SMEs by providing a range of various resources to enhance learning, training og development in them.developing more local learning networks and to assist SMEs by providing a range of resources to enhance learning, training and development in them.

Executive summary

Introduction

WORKTOW was a multidisciplinary action research project, with its main focus on the learning of older workers (aged (45+) in working life. Its starting point was the individual and organisational effects, needs and opportunities emanating from the intersection of two trends in society, namely, the ageing of populations and changes in working life. These trends, in turn, have strong implications for lifelong learning and discussions about competence maintenance and for both individual and organisational development.

Aims

The aims were to investigate:

- how to recognise, value and utilise job competence (skills, knowledge, attitudes);
- learning at work;
- HRD practices involving older workers and the facilitation of lifelong learning
- diversity of the workforce in facilitating the development of learning organisations.

Methods

The study was conducted in 27 SMEs in industrial, service and office-work sectors in England, Finland and Norway. Data was collected through questionnaires and interviews with management and employees, and through documentary analysis together with some direct observation. The questionnaires were partially standardised among partners; they involved similar questions to employees and management, with questions to the latter being constructed from the point of view of the company. Case studies, in which a range of learning interventions were developed and applied within a group of SMEs were also carried out and evaluated.

Main results

Job competence

In most of the companies, skill requirements were undergoing a change, so that additional and/or new skills were needed in the use of computers, in communicating with customers and with increasing emphasis on the need to understand the whole production process.

The job competence of older workers was generally highly valued. The existence of negative attitudes towards older workers and the generally held view that they lack competence and that their skills are dated, was not supported by the results of this study. On the contrary, we found that mature workers bring a range of knowledge, skills, experience and positive attitudes to the workplace, complementing those of less experienced workers. Differences in competence among workers were ascribed to individual characteristics rather than to age, particularly among management.

Systematic monitoring or documenting of the characteristics of competence did not exist, beyond occasional developmental talks or in skills audits. There was an assumption that this information was 'known' tacitly by managers. Employees considered social competence, professional competence and work morale to improve with age. The job competence of experienced workers was acknowledged and utilised internally in SMEs e.g. in mentoring. Competence was seen both as an individual and a collective phenomenon based more on work experience and personal characteristics than on formal training.

Learning at work

Changes in working life and in the workplace presented a challenge to the learning efforts of both older and younger workers alike. It also reduced their opportunities for learning, due to increased workloads and pressures of time. In some cases, the former opted for a strategy of adjustment rather than choosing to participate amidst the changes. Age was not related to how stimulating workplaces were experienced as learning environments, nor to the subjective assessments of learning attitudes, skills, or motivation, except for memory and speed of learning. Stronger variation was found between sectors and companies. However, in some cases older workers, especially those with higher levels of education and expertise, did not find their work as stimulating in small businesses, in terms of new learning as their less experienced colleagues did.

In the service sector, learning challenges originated predominantly from within the work itself, especially from the requirements of customers. In industry, they were related more closely to outside forces (e.g. quality requirements, educational reforms, labour market) or to technological innovation. In some SMEs (notably in the UK) with low status jobs and a predominance of relatively poorly educated female workers, issues concerning the development and training of staff and their learning and the possible need for change in the organisation, were not considered to be of any importance either for employers or for their employees.

In spite of this, attitudes towards learning and training were generally positive. However, employees and management did hold systematically different attitudes to learning and training for employees - employees were more positive, employers strongly underlined individual differences. What the management rated systematically more positive than the employees did was the learning opportunities that the company provided. Social and professional competence, together with work morale were all considered to improve with age.

New technology constituted the greatest learning challenge to all employees. No general rule applied, however; in some SMEs older workers coped well with new technology, as acknowledged by their younger colleagues. In others, it was a cause of their exit from the labour market.

Learning related to practice was preferred over formal training. It was seen as a highly social and collegially shared activity, whether consciously acknowledged as such or not. In some companies where formal training was provided, besides practical and immediately utilisable knowledge, the need to acquire the kind of knowledge that would have greater general applicability was also expressed.

HRD & lifelong learning

Our results showed that planning cycles were relatively short in most SMEs, especially the smaller ones, making long range planning and investment in personnel development problematic. The consequences were most severe in relation to investment in training and development. HRD was typically not an issue in SMEs and not considered a central area of activity. Human resources were not viewed as the most important aspects of the companies' consideration of their future relative to other areas, such as product development, the needs of clientele, or direct economic considerations. Older workers did participate in informal and non-formal training in the same way as younger workers, but to a lesser extent in formal training. Furthermore, in industry, significant age differences were found in participation in formal training unlike in service and information work. Observations from Norway indicated that, in industry, there was a growing appreciation of those in their fifties as being an asset to the company, but while they were consequently invited to take part in programmes of vocational education, only very few accepted the offer.

The learning culture was generally rated fairly positively, especially among older workers. Variation was found across sectors, but was viewed least positively by those in low-skilled jobs. Employees were somewhat less satisfied with feedback systems and with the level of support and encouragement for their participation in learning from management. Management's low profile in this regard was justified by a rationale according to which employees need to be active and take the initiative themselves in order to obtain the support of management. In other words, management did not consider it their job to identify developmental needs and challenges at individual level among their staff. Employees and manager rated learning culture quite differently, however, between the three participating countries. The employees rated learning culture the best in the UK companies and the least positive in the Finnish SMEs, while the management in Norway rated the situation much better than the management in other countries – or the Norwegian employees.

Even in companies where learning at work was acknowledged as an issue and attention had been paid or initiatives put in place to enhance learning and development among employees, nothing other than job skills was monitored or documented. The competence development of younger workers, however, was more visible and systematically addressed through senior-junior partnerships (e.g. mentoring), while older workers were viewed as contributors and 'teachers' rather than as being themselves in need of learning and development (except within IT). The contribution of the latter was typically taken-for-granted rather than specifically credited or rewarded. Little attention was paid to ways in which learning might be transferred from formal training settings to the workplace, beyond tailoring and narrow targeting of courses provided. In cases when an older employee had high experience but work with little stimulation to new learning and workplace with scarce career opportunities, this situation sometimes led to estimations of low value and meaningfulness attached to training related to one's current job.

Diversity and learning organisations

Thinking in terms of learning, not just in terms of working, was something of a new concept in small businesses. Accordingly, any consideration of the workplace as a learning environment and a learning organisation was also a newly emerging issue. Responding to the new learning imperative in working life and utilising the diversity of personnel challenges the competence of managements in a way which is crucial to the progress of SMEs towards becoming learning organisations, especially in more traditional occupations and in older companies. According to our observations, some SME managements are not always sufficiently aware of the existence of this learning imperative, nor very well equipped to meet it.

A major issue when considering the workplace as a learning environment is the extent to which work tasks and skills have been specialised on one hand or integrated and shared among workers on the other. Whilst the development of an appreciation of collective job competence (e.g. in team work) was observable in the service sector and information work, this kind of development appeared to be slow in traditional industrial plants Diversity in terms of age/experience/competence within the workforce was generally valued and utilised in SMEs. We also found fairly strong inter-generational solidarity in SMEs, indicating an appreciation of specialised expertise as well as collective aspects of knowledge and skills in companies. This solidarity was probably an important factor accounting for older workers' satisfaction with their taken-for-granted contribution to informal competence development among the younger workers. It also contributed to continuity in the various workplaces and thereby helped to counterbalance the continual changes being experienced.

Nevertheless, in some SMEs, older workers felt they could contribute more than their current job tasks allowed. This contribution and its potential usefulness was not always recognised by management. Where extra value was attached to informal, experience-based knowledge in working life there seemed to be an increase in the appreciation of the competence of older workers; this was helpful in balancing out managements' views relative to their impressions of younger workers.

Case studies on learning interventions

WORKTOW interventions focused on mapping the learning environment in general, including opportunities for participation in learning situations, attitudes towards older workers, perceived competence and the investigation of individual learning styles and preferences for learning. The rationale, the methods used and the subjects involved in the various project sites varied, whilst the goal was shared i.e. to improve opportunities for learning among older workers. Some partners chose to focus solely on older workers, whilst others adopted an integrative approach involving all workers.

Our results showed that successful work-based learning and training interventions involving older workers have the potential for improving their motivation for learning, for strengthening their self-confidence and organisational commitment, and for improving the social climate in groups with mixed ages.

Given that an understanding of learning styles will assume a new relevance as the practice of lifelong learning becomes more established, WORKTOW was innovative in that it introduced a new and more focused method of analysing individual learning style preferences to Europe, drawing on research from the USA. It also showed the value of developing a biographical approach to understanding older workers' attitudes towards undertaking learning and their pedagogical preferences. Such methods have considerable implications for human resource development practice and ultimately for the promotion of lifelong learning across Europe.

When case studies were targeted on the evaluation of a vocational training programme involving older employees (Norway), and employment development schemes (UK) the results showed that it succeeded in contributing towards helping older workers in learning to learn and developing their self-confidence, in improving teamwork and the social climate, in enhancing organisational learning, and in combating age-barriers.

The action research conducted in SMEs – notably in Finland - succeeded in providing more systematic information and knowledge concerning the situation in the companies around the WORKTOW themes: learning, training, competence and its development, HRD, and awareness of ageing and its significance from the company's point of view. The project enabled new thought processes and reflection among employers and management, but to a lesser extent among employees in many SMEs.

As an approach to workplace learning, action research assumes a strong reliance on the ability of employees and employers to formulate problems and to self-reflect and on individual and collective involvement (participation and communication) in organisational change processes, presupposing a measure of learning. Our results showed that there appears to be a low level of awareness of, and reflection on, such a "self-educative" power in the SMEs studied, even though our observation and analysis of everyday practices offered strong evidence of the existence of this phenomenon. The results suggested strongly that, in research with this kind of orientation, it is not sufficient for researchers to generate "manageable" knowledge from the company's situation or to make the tacit knowledge embedded in various practices more visible. Equally important is to allow time to provide support to management and employers to enable them to convert knowledge back into practice. Otherwise, there is a danger that results from any analysis of issues in learning and HRD – rarely uppermost in the minds of employers and managers in SMEs – will not translate into usable practice. Rather, as in some of the companies, findings may be judged as "too general" and will thus be seen by managers as having little value in everyday practice. In companies where managers were more open to receiving and reflecting on this type of information, our reflexive interventions succeeded in helping to reframe the situation of older workers and learning in general.

Conclusions

Overall, the results suggested that, rather than focusing more strongly on dispositional aspects, such as developing favourable attitudes towards learning and improving internal motivation amongst employees of all ages, several situational and institutional issues are central when aiming to encourage SMEs and their personnel to see themselves as learning organisations.

Workplaces need to be acknowledged as learning environments. It is important to focus on organising work and the workplace itself to allow more time for learning and reflection on how to improve learning at work for all employees. Although this study focused on small businesses, it showed that internal communication and information flow can and should be improved in these companies. When developing a suitable environment for learning in the workplace, it is more useful to adopt the specific attributes of the particular job sector and occupational branch in question, as well as the local situation in the company (including level of formal education among the employees) rather than focusing on the age of the potential participants.

There is a need to develop more systematic methods and measures for broad-based job-competence assessment and for its documentation in SMEs. Such an approach would help to encourage a more transparent and long-term planning strategy in respect of individual and collective competence development as well as overall organisational planning. These measures would also make the existing practice of subjective (typically by management and supervisors) and categorical (e.g. on the basis of age) evaluations of competence more objective and potentially less discriminatory.

In sectors involving low skilled workers in low status jobs – especially women – there is still a long way to go, on the one hand, in increasing awareness of the importance of learning and arousing interest in it; and on the other, to encourage employers and older workers themselves to recognise and acknowledge their importance in the workplace and to accept some responsibility for ensuring that they have access to learning and training opportunities.

There is a need to pay more attention to practical training outcomes and the consequences for motivating experienced employees in SMEs to develop themselves further. Older workers especially, and those with higher levels of education and expertise, should find participation in training rewarding and meaningful in the workplace context. Our results showed that this is not always the case in small businesses with low career oportunities. This is likely to pose a challenge to training providers as well as to managers and employers in SMEs.

While the diversity of the workforce is acknowledged and we found indications of a strong sense of inter-generational solidarity in many workplaces, this could be improved further by increasing awareness of the issue and by developing more systematic strategies to address it. Such a development would also improve the collective functioning and the utilization of collective competence in many workplaces as well as increasing broader awareness of strengths and limitations in organisational competence.

The new learning imperative in working life challenges the competence of management in a completely new way. There is a need to focus on the development of this in the areas of both competence management and age management. Members of management in SMEs would clearly benefit from developing their own abilities in knowledge management, in how to deal with the new area of learning support, in competence development, and in the development of working environments as learning environments. This would involve acquiring new skills in communication and cooperation with various external training providers, as well as improving analytic skills in relation to systematic monitoring and in addressing the situation in different companies and amongst various groups of employees.

Besides the development of competence, enhancing learning in SMEs calls for manage-

10

ment to consider investing more in developing local learning networks. Such a development has the potential both to increase the effectiveness of training providers and to improve awareness of training provision in SMEs. Regional governmental agencies, such as Employment and Economic Development Centres, or their equivalents, could play a more effective coordination role in these developments. The latter could also assist SMEs by providing other resources (financial support, information, etc.) to enhance learning, training and development in them.

Finally the results suggested that, from the point of view of older workers in SMEs, an integrative approach to various HRD initiatives to enhance organisational learning, rather than age-segregation, is to be recommended. Such a view is based on the assumption, and observation, that in terms of overall competence, highly experienced mature workers and newly trained younger ones have complementary skills, knowledge and attitudes. There is therefore considerable potential for them to learn from each other and thus to increase collective organisational competence.

Content

Abstract 3

Executive summary 4

I Introduction & objectives 12
- General background 12
- WORKTOW objectives 14

II Theoretical framework 15
- Older workers in a changing labour market 15
  - Labour market trends 15
  - Labour market and the older workers in Finland, Norway and the UK 15
- Working life changes and their implications for older workers 18
  - Increasing flexibility and changing competence requirements 18
  - Older workers in the workplace 22
- Changing careers 24
- Age-awareness and HRD in companies 25
- Participation of older workers in education and training 29
- Policies and practices of lifelong learning (LL) 31
  - Towards a coherent system of LL as a goal 31
  - Existing policies and practices narrowly focused on economic and vocational aspects 31
  - What is in there for older workers? 32
  - Lifelong learning policies and practice in the WORKTOW countries 33
- Learning in the workplace 33
  - Re-conceptualising learning and competence at work 33
  - Little attention to learning and competence development among older workers or in SMEs 36
  - Older workers as learners 38

Empirical studies 43

III Survey on SMEs as learning environments 44
- Companies and employees participating in the study 44
- On describing the results in this report 46
- Results 46
  - Organisational context for learning of older workers 46
  - Employees' views of SMEs as learning environments 48
  - Summary and conclusions 55

IV Case studies on learning interventions 57

Learning interventions as individual reflection on learning styles 58
Alexandra Withnall, Keele University

Learning interventions based on Employee Development schemes (EDS) 63
Peter Ward, Lancaster University

Learning interventions as action research with a broad developmental assessment 68
Tarja Tikkanen, University of Jyväskylä, Norwegian Institute of Adult Education (NVI)

Learning interventions as evaluation and data feedback of dialogic practices and career development 86
Kolbein Lyng, Norwegian Social Research (NOVA)

Learning interventions as participatory analysis of learning practices and career patterns 89
Leif Lahn, Work Research Institute (WRI)

A summarising comparison of the learning interventions 97
- **Learning interventions compared** 97

Comparison of the results of the WORKTOW learning interventions 99
Summary of the effects of the research-based interventions 99

IV Conclusions and policy implications 100

Summary and conclusions relative to WORKTOW objectives 100
- ***Recognising, valuing and utilising the job-competence of older workers in work and learning situations*** 100
- ***Older workers' learning in work settings*** 102
- ***HRD involving older workers facilitating lifelong learning and productivity and combating exclusion*** 106
- ***Diversity of workforce in terms of age and competence contributing to learning organisations*** 109
- ***Flexibility and productivity of the European older workforce and their significance in the discussion about social cohesion*** 111

Policy implications 115
Implications for research strategies and agendas 117

V Dissemination and exploitation of results 118

References 122

1 Introduction & objectives

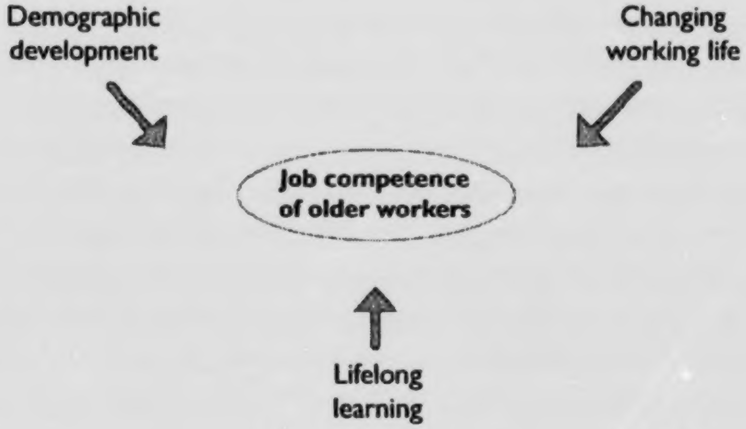
General background

WORKTOW was a multidisciplinary research project, with its main focus on learning among older (45+) workers. Thus, the central theme was concerned with job-related competence (defined broadly to involve knowledge, skills, learning, values, and attitudes), its maintenance and development, as well as formal and informal learning on-the-job. WORKTOW focused on small and medium sized enterprises (SMEs), thus aiming to expand the knowledge base in HRD, so far mostly drawn from studies in large companies. Its starting point was the individual and organisational effects, needs and opportunities emanating from the intersection of two trends in society: the ageing of populations and changes in working life. These trends, in turn, have strong implications for lifelong learning and discussions about competence maintenance and development (figure 1).

Demographic change – the ageing of the population together with decreased birth rates and mortality (increased longevity) - will continue to drastically alter the structure of the workforce in coming decades. This development will impact on working life directly through a diminishing supply of labour and indirectly through its implications for productivity and competitiveness (competence maintenance and development among the workforce) as pointed out, for example, by the OECD. Consequently, there is a need for a better understanding of how the labour market and working life itself could adapt to an ageing workforce (OECD Employment Outlook, 1998).

The continuous changes in working life, exacerbated by technological development and an increasingly global economy, will continue to impact on general competence requirements. As a result, the value of traditional training systems has been challenged and there is an emerging need to adjust educational systems to the requirements of working life (economy) (National actions to…, 2001). Related to this, the focus on competence develop-

Figure 1 WORKTOW's central themes



14

ment has changed from training to learning and with emphasis on a much broader range of learning environments; in particular, the workplace is now acknowledged as of considerable importance, sometimes more so than formal training settings (e.g. Billett 2001).'

In combination, these two trends of workforce ageing and a rapidly changing working life have contributed to the development of a highly ambiguous view of the competence of older workers (Tikkanen, 1998a). This changing working life and demands for new and renewed skills and knowledge, has resulted, on the one hand, in their competencies becoming labelled as obsolete and lacking. Together with difficult employment situations and early pension policies, the latter has contributed to increasing age discrimination and an exclusion of older workers from the labour market during the 1990s (Walker, 1997). On the other hand, as the knowledge and skills, based on formal training, have been judged inadequate in working life, the value of experience-based "real competence" (Nordisk kartlegging..., 2001) or Cross Curricula Competencies (OECD) has increased in importance. Whilst, in principle, this could allow for greater value being placed on the competence of mature employees, in practice this value varies considerably depending on the nature of the expertise and thus of the job tasks and context in which it has developed. Routine expertise has a whole different value from "flexpertise", more flexible expertise (van der Heijden, 1998).

These developments have made it necessary to revitalise the old idea of lifelong learning (Tikkanen, 1998a). Since the EU White Paper in 1995, a number of initiatives have been made through, for example, the European Commission (National actions to implement, 2001). There is a pressing need to develop systematic learning initiatives and interventions. On the one hand, occupational knowledge and skills acquired once in a life-time are not necessarily valid and sufficient over the course of a changing working life. On the other hand, training institutions are faced with demands to adjust and align their course provision and curricula with the competence needs and demands of working life. The main goal for the latter is to fill in the gap between formal training and competence needs in workplaces. Thus, there is also a need to understand more of how to ensure commensurability between job-related learning and training and the experience-based competence of mature workers and the needs of working life. As regards the latter, most arguments have been based on the deficit-assumption, which is also more broadly applied to defining older people in society. In line with this view the job competence of older workers is obsolete or "lacking" and thus they are "in need" of new skills and knowledge (Tikkanen, 1998a). Acknowledging the need for new learning, we have, however, focused in WORKTOW on examining the added value of mature competence in current working life.

By nature WORKTOW was an action-oriented research project, aiming to develop and evaluate case studies of good practice in educational and training interventions in SMEs in different occupational fields. To prepare the learning interventions a survey was carried out in all the participating SMEs, targeted separately on employees and managers/employers. Choosing a company as our research unit defined our approach as contextual and systemic to examining learning and competence of older workers. The purposes of WORKTOW in relation to organisational policy and practice were to identify innovative ways:

- to motivate employers to invest in older workers - but also more broadly in low-educated employees,
- to motivate older employees to participate in learning activities, and
- to utilise the competence (knowledge, skills and attitudes) of older workers.
- To demonstrate through case studies and comparative analysis of good practice in different countries the ways in which the above objectives can contribute to the flexibility and productivity of the European older workforce, to social cohesion, and to the improved functioning of the European labour market generally.

WORKTOW objectives

The objectives of WORKTOW were targeted to five areas, and were described as follows:

Job competence:

☐ To investigate the extent to which the knowledge, skills, experience, and attitudes of older workers can be recognised, valued and utilised in work and learning situations.

Learning at work:

☐ To investigate the ways in which older workers learn within work settings.

HRD and lifelong learning for productivity and against exclusion:

☐ To investigate the extent to which human resource development practice and educational interventions involving older workers can facilitate lifelong learning and productivity, and, thereby, also contribute to the policies and practises that can prevent the exclusion of senior workers from working life.

Diversity of workforce contributing to learning organisations:

☐ To investigate the ways in which the diversity of the workforce in terms of age and acquisition of knowledge, skills, experience and attitudes can contribute to the develop-ment of learning organisations in the work context and, more generally, to the creation of the learning society.

Flexible workforce and social cohesion:

☐ To demonstrate through case studies and comparative analysis of good practice in different countries the ways in which the above objectives can contribute to the flexibility and productivity of the European older workforce, to social cohesion, and to the improved functioning of the European labour market generally.

II Theoretical framework

Older workers in a changing labour market

Labour market trends

The employment situation in Europe was problematic during the 1990s, particularly for older workers and other marginal groups. Towards the end of the decade there was a slight increase in employment among those under 55 years of age but the situation remained stable in the 55-59 age group, and dropped slightly among 60-64 year olds (Older workers in the labour market and outside, 2000).

According to the OECD Employment Outlook (1998, pp. 123-126), the labour market situation of older workers will, in future, be characterised by the following developments:

- Over the next few decades, the predicted ageing of the labour force will be outside the range of recent historical experience. According to one scenario, between 1995 and 2030, the average proportion of workers aged from 45 to 59 years will rise from 27 to 33 per cent in the 15 countries of the EU. It is not clear how labour markets will adapt to this increase in the supply of older workers. Most likely, however, companies will need to employ a greater proportion of workers aged 45 – 59 years, as well as those over current retirement age (over 60 years).
- Educational attainment among older workers will rise rapidly.
- The emerging skill demands of working life will increasingly need to be met by mid- and late career workers.
- Key factors in determining the employment and earnings opportunities of older workers will be the HRD practices of companies (training, recruitment, pay, etc.).
- Proactive strategies acknowledging the skills-base of the older workers are likely to be more effective than remedial measures after employment problems have been encountered.

Older workers' situation in the labour market will also be influenced by the predicted labour shortage related to lower expansion rates in the pool of younger workers. It is anticipated that the biggest labour shortage will be in the service sector - in which jobs tend to be less physically demanding (Kramer, 1995). However, prediction is difficult, due for example, to developments in the technical sector. It is probable that, in future, many service jobs will be held by older workers (Kramer, 1995, 23). The experiments made in hiring older employees have been encouraging. They show, for example, that the costs for employers decline due to lower turnover rates and lower training costs (of newcomers) and that productivity has increased, as well as that older workers have appeared to be superior in dedication, reliability and quality of work (Kramer, 1995; Schneider, 1994).

The conclusions made concerning the socio-economic implications of population ageing tend to be rather pessimistic or expressed in negative terms. The ETAN (European Technology Assessment Network) expert group introduces a more optimistic perspective, in which demographic change is viewed as a positive opportunity for the European economy. It is pointed out that this opportunity "*lies in innovative technological, social and organisational responses to the challenges of an ageing population. Through innovation it may be possible not only to avert potential economic problems, but also to enhance the quality of life of older people, and to develop new business possibilities for European industry*" (Ageing Population and Technology 1998, 5). The ETAN report identifies three broad areas of such innovative opportunities, namely, those related to:

- the extension of working life among older people
- enhanced activity, mobility and quality of life
- health, well-being and support.

Concerning older workers at a Europe wide level, we still are in a situation in which there exists a range of recommendations for policy formulation on various levels, but in which practice is still based on single examples. In other words, there is still considerably more debate concerning the situation of older workers than practical initiatives. On a company level this situation is very clearly demonstrated in the comparative report *Human Resource Management in Western Europe*. None of the contributors from the then, in mid-1990s, 12 EU countries dealt in any depth with the implications of population ageing for HRM practices. The editor concluded that this omission indicates how "the realization of this evolution along with the disruptions, both social and organizational, that it entails, seems very weak" (Brunstein, 1995a, 3).

Labour market and the older workers in Finland, Norway and the UK

Table 1 summarises the main characteristics of the labour market trends framing the situation of older workers in the three WORKTOW countries. This overview is supported by a more detailed description of the situation in each country.

UK

As in other European countries, the UK labour force is ageing and by 2011 there will be over 2 million more members aged 45+. Factors contributing to the changes in employment patterns affecting older people include the decline in the UK manufacturing industry, the encouragement of early retirement, the impact of technology on skill requirements and flexible production regimes. Recently the government has set out a range of measures that are expected to improve older people's opportunities to contribute to the economy and to society in their later working years, eg. the New Deal 50+.

Table 1 A summary of the labour market trends in the WORKTOW countries

Countries	Labour market trends
UK	Exclusion and marginalization of older people from the workforce and under-representation in training schemes.
Finland	Labour market situation for 55+ workers persistently problematic, drawing from the early labour exit pathways and severe economic recession of the early 1990s. Three major governmental, cross-administrative programs have been launched, addressing directly or indirectly the situation of ageing workers, with a focus on ageing, working-life development and well-being in working life[1]. Some improvement recently observed in the employment situation of older workers.
Norway	A shortage of labour and high pressure in work life together with a culture of early retirement has contributed to a lowering of the real pension age and a decreasing number of older workers participating in training and learning.

---

[1] For more information see National Age Program at http://www.stm.fi/english/current/ageprog/index.htm, the National Workplace Development Programme at http://www.mol.fi/tyke/new/english/index.htm, and Well-being at Work Programme at http://www.mol.fi/jaksamisohjelma/svenska_english/eng_index.htm.

Finland

There are several summary reports available describing the situation of older workers in Finland. The overview presented in this chapter is based on the reports *Older workers in the Labour Market and outside* (2000) and *Older workers in Finland*, parts I and II (Tikkanen, 2000a; 2000b). From a broader European perspective, the situation of older workers in the labour market and in society more generally started to gain attention relatively late in Finland. When major political initiatives were taken, however, they appeared to be both powerful and prestigious and rapid progress has been made. As a result, the solutions devised and the broad approaches adopted towards older workers in Finland are currently regarded as examples of good practice by many other European countries (Active Strategies for an Ageing Workforce, 1999: Ilmarinen, 2000; Tikkanen, 2000a). There are two landmarks, which in this context are the most significant ones. The first is the National Programme for Ageing Workers[1] 1998-2002, implemented jointly by the three Ministries of Labour, Education, and Health and Social Affairs, involving central social partners, too. Secondly the development of the broad model or index of workability by the Institute of Occupational Health, marked a new holisitic approach to older workers. The index combines various aspects of health (physical, social, psychological), job competence, and age-management as central elements in a consideration of the situation of older workers in various workplaces, and is currently also used in other countries. Other major governmental initiatives, highly relevant to older workers, are the National Working Life Development Programmes[1] and the Well-being Program[1], the latter focusing on individual consequences of changes in work and working conditions.

In addition to the various early exit pathways also developed in Finland since the 1980s (Gould, 1996), another main factor militating against the situation of older workers in the labour market was the economic recession of early 1990s, this being one of the deepest in the history of the country. The resulting, persistently poor employment situation in the country has been especially detrimental to older workers. In several others respects, the situation of this section of the workforce is influenced by factors that are shared by many other European countries. There is a rapid growth of population over 55 years of age, more so than in any other EU Member State or in the USA (Older workers in ..., 2000). An increasingly early labour exit and subsequent falling labour force participation rates among older workers has been driven by early pension policies. Towards the end of the 1990s and the beginning of the new millennium, the rapid recovery of the economy has, paradoxically, resulted in serious problems in relation to employee well being and in the simultaneous existence of labour shortages and unemployment. Job-related stress and exhaustion have increased in health care and education, but also in different branches of the private sector, as indicated by various measures of working climate. Practically no age group of workers has been left untouched by this phenomenon. This situation formed the background to the national program in well-being: *"People feel exhausted and drained of energy, and at many workplaces no longer get any pleasure from working. Worker skills and know-how have not always kept up with the fast-changing demands of the job. A rising workload often has to be carried by an ever smaller staff."* (http://www.mol.fi/jaksamisohjelma/svenska_english/eng_index.htm)

Traditionally the approach to older workers in Finland has been characterised by a strong focus on health-related issues. More recently, this approach has been broadened, as described above, and a multitude of measures, including job competence and issues related to work environment and management, is currently used. In addition to improved job competence and workability, improved employment is a major goal in various initiatives. The participation rate of older workers in education and training started to increase during the recovery from the economic recession of the early 1990s. By the mid-1990s, this rate in job-related CVET (so called 'personnel training') had reached the levels of younger age groups, because the increase in participation has been strongest for employees aged 45 years and above.

Norway

In the mid-90s, the situation in the labour market in Norway changed from one of relatively high unemployment to a shortage of labour in many sectors. At this time, fewer older workers were pushed out of working life, but during the last years, the tendency has been towards a continual lowering of the real pension age. At the moment it is below the age of 60 – despite a period of economic growth and a governmental strategy of stimulating integration into work life - the so called "work line". In addition, there has been a growing understanding that the shortage of labour in many sectors cannot be reduced by importing skilled workers from abroad, and that the only solution is to invest in the existing work force (The Norwegian Labour Market 2001). None of these initiatives have so far been successful.

The latest major initiative, the *National Action Plan for Senior Policies within Working Life* ("Strong Lift", Krafttak), launched jointly by the social partners, government agencies and private companies, is a broad-based programme aimed to reverse the negative trends towards a lower actual retirement age (Nasjonalt krafttak for seniorpolitikk i arbeidslivet, 2001). Another major initiative, also highly relevant to the situation of older workers, is the idea of competence reform (in adult education) in Norway[2]. In addition, legal and financial measures have been taken in an attempt to make pension schemes more flexible (NOU 19, 1998). These initiatives aim to improve both the working environment and learning opportunities for employees during the later stages of their careers. Recent studies in Norway indicate a negative trend in these latter areas due to an intensification of work (heavy time pressure and increasing work loads).

Working life changes and their implications for older workers

Increasing flexibility and changing competence requirements

To reinforce companies' competitiveness, attention has been strongly focused on increasing flexibility in working life, and efforts made accordingly. The idea of flexibility has been approached and defined from various points of view, resulting in a range of efforts to describe and model this variety in a coherent way. In table 2 we have described various aspects of these flexibility requirements from the demand side of the labour market. The four different flexibility areas examined are numerical, functional, technological and organisational. The factors driving these notions of flexibility derive ultimately from the broader changes affecting the labour market and working life, as demonstrated in, for example, new production systems, changing competence requirements and renewed occupational structures. In table 2 we have also suggested possible alternative consequences from these trends for learning and competence development, albeit there is some overlap from one approach to another. Finally the table suggests possible implications for the situation of older workers (contingencies), depending on the measures adopted to address the various types of flexibility requirements.

Numerical flexibility refers to changes in the number of employees or in working time (also referred to as "temporal flexibility") eg. the amount of overtime or part time work. The externalisation of tasks is also included in this term – that is, the extent to which the production of goods or services is not carried out by employees, but is out-sourced to other companies or manpower is hired on a temporary basis. This type of flexibility requirements reflect the quantitative strategy of HRM to address increasingly competitive markets (Brunstein, 1995b), in that it concentrates on staffing and aims at aligning person-

---

[2] More information at http://odin.dep.no/kuf/engelsk/education/competence-reform/014061-990031/index-dok000-b-n-a.html

20

Table 2 A relationship between types of flexibility on the demand side of the labour market, competence needs, implications for older workers and possible contingencies in work life influencing the situation for this age group.

	Competence needs	Implications for the development of older workers	Contingencies
Numerical flexibility	Basic skills Learning ability Self-confidence	Reduced investments	Negative effects if task externalisation becomes a dominant strategy
Functional flexibility	Multi-skills Problem-solving skills Communication skills Transferable skills	Greater recognition of their competence through the added value given to experience-based knowledge Broadening of skills Negative transfer	New organisation and methods of training Work experience as basis for developing new skills
Technological flexibility	Computer literacy Learning ability	Stereotypes about learning to use computers Few learning opportunities	Differences in familiarity with computers (cohort)
Organisational flexibility	Social competence, participation & co-operation Meta-competence	Appreciation of wisdom as a quality in social relations Emphasis on change resistance	Participation in development processes and differentiated solutions

nel with the needs of a firm according to outside markets. Market trends are integrated into business plans through personnel planning and the key strategy considers human resources mainly as a cost factor (Brunstein, 1995b). From this point of view, older workers are especially vulnerable. On the one hand, this is because salaries are often tied to seniority, making older workers more expensive to employers. On the other hand, emerging strategies, such as out-sourcing, may reduce the need for the internal development of competence in companies and therefore have a negative influence on investments in the training of older workers. Furthermore, an age-mix and different recruitment profiles in companies affect the career opportunities, turnover, mobility, problem solving capabilities and cultural climate (Pfeffer, 1983; Lawrence, 1996).

Most turbulent organisations are not to be found in private sector, but in the public sector (Torp & Mastekaasa, 1990) with a high average age among the employees (public administration, educational institutions). Older workers are more affected by both downsizing and internal reorganisation than their younger colleagues. The main reason is that this age group is concentrated in sectors like traditional industries and larger companies that are subject to radical changes (Unseem, 1993). Studies on layoffs have found that older employees are less likely to be replaced than their younger colleagues reflecting seniority agreements in industrial relations (Forsberg & Olofsson, 1993). One of the purposes of launching early retirement policies in the 1980s was to provide work opportunities for younger people. However, this line of thinking was short-sighted; Mirkin (1987) has shown that in economically difficult times, employers did not actually replace those older workers who had left the company.

Functional flexibility refers to changes in work content and work tasks. It is thought that

21

this kind of flexibility can be met by the development of new technical skills, multi-skilling, problem-solving and meta-cognitive abilities, methodological skills (Onstenk, 1992), learning to learn (Froman, 1994) and other meta-skills (Hall & Mirvis, 1995), as well as social skills (Larson, 1992). Organisations, however, strongly direct the development of these skills. As van Vianen (1997) has pointed out, it is not just any learning among employees that is rewarded, but only those needed for the organisation to operate effectively. Consequently, she suggested that organisations have to create their own flexible workforce, defined by and related to the core skill needs of the organisation.

The general demand for a broader and multidimensional knowledge base is reflected in the attention given to key qualifications and informal learning (Bjørnåvold, 2001). According to Bjørnåvold (2001), the importance of key qualifications is related to concerns about the application ('knowing how' rather than 'knowing that') of facts, theories, and rules in social, organisational and technological settings within the context of unprecedented organisational and technological change. Referring to the expertise development described by Dreyfus and Dreyfus (1986) he further suggests that key qualifications represent a transition "towards intuitive and involved skilled behaviour based on accumulation of concrete experiences" (Bjørnåvold, 2001, 81). In as much as this is true, functional flexibility could offer older workers improved chances for development, based on recognition of the value of their prior learning and competence (APEL). However, this might also be hampered by an inability to transfer this prior learning in situations demanding the development of new knowledge and skills.

Technological flexibility refers to new requirements that are associated with the introduction of computer-based tools. Often such changes are closely connected with re-definitions of work content and task structure, but the mastery of new technology may require task-independent qualifications (Zuboff, 1988) such as abstract reasoning, textual skills and systemic understanding of work processes (Schumann, 1998). The development of skills required by new technology is among the core challenges for older workers and their job-competence. In addition to actual shortcomings in their skills, there are often stereotypes operating against older workers, under the assumption of social information processing theory (SIP) (Salanick & Pfeffer, 1978). According to SIP theory, individual perceptions are likely to be influenced by the opinions, information and behaviours of others (van Vianen, 1997). These stereotypes concern their assumed lower trainability, flexibility and cost-effectiveness compared to younger workers, and are used as main arguments for not investing money in their training and development (van Vianen, 1997). For example, older workers are often believed to have trouble in learning to handle computers and to resist computerized work (Kelley & Charness, 1995). However, training programs in this field do not usually incorporate the expertise of experienced professionals (Warr, 1998).

Research addressing the issue of work performance and technology use among older workers emphasises the following characteristics:

- the percentage of workers in this age group doing computerised work is comparatively low
- they are poorer performers,
- have negative attitudes towards the use of new technology and
- follow specific cognitive strategies in their work with computers.

However age-related disadvantages may be reduced and eliminated by instructional design tailored to the needs of older workers (Sterns et al., 1994; Sharit & Czaja, 1994; Baracat & Marquis, 1994; Holm, 1994).

Organisational flexibility is not necessarily related to changes in work processes and technology as it is "concept driven" or "market driven" (Gustavsen, 1996). The conditions and requirements implicated in increased organisational flexibility partly overlap with those described above in relation to functional flexibility. The need to develop more flexible organisations has also been referred to as a form of *structural flexibility* under the assumption that the remodelling of a firm's structure is the primary weapon for obtaining increased production (Brunstein, 1995b). According to this assumption, there is a "*general need for restructuring organisations and jobs to incorporate greater scope for intrinsic motivation and to facilitate employee involvement by developing broadly challenging jobs within a more organic flexible organisation*" (Brunstein, 1995b, 318). The essential driving force in this restructuring process is the change in corporate cultures from vertical to horizontal structures. Such a culture is characterised by collaborative partnerships (instead of command- and-control managerial hierarchy), and a workplace which is increasingly team-driven and intimate, with more intensive interaction and more emphasis on soft-skills (MacLeod 2000 in Cleveland-Innes & Potvin, 2001). Such a new environment will have consequences for learning interventions, which we will discuss later in this report (see chapter on Learning and competence at work later in this report).

The discussion around what kind of competencies is needed to increase organisational flexibility is highly speculative. Typically this discussion derives from the requirement for supporting horizontal structures and underlines the need for employee participation and co-operation. This, in turn, requires high-order social and communicational skills to enable eg successful networking. The consequences for the development of older workers can be positive or negative. On the one hand, the broad social competencies and meta-competence, which are central to developing this line of flexibility, is an area which develops through maturity and experience and could, thus, be advantageous for older workers (see chapter on Learning and competence at work later). On the other hand, if older workers' resistance to change, real or assumed, is adopted as a starting point, it may have detrimental effects for further development among this sector of the workforce.

Older workers are amenable to new organisational designs, for example team-based work (Hayslip et al., 1995), but temporary structures like adhocracies, network structures and project organisations can function contrary to the need for stability and slowing-down in late career (Hirsch & Stanley, 1996). However, senior employees are also given new opportunities, since their life-situation demands less investment in familial obligations. In light of the many changes currently taking place in working life, the absence of studies that throw light on the reaction and role of older workers in such processes surprise us.

Table 3 describes the flexibility called for by the *supply side* of the labour market. Merson (1996) has made a distinction between flexibility of skills and of working conditions. The former refers to the level and relevance of skills (Young, 1993), as well as to the convertibility of skills in the labour market. Flexibility of working conditions refers to legal and contractual regulations of employment, working time, working environment etc.

From the point of view of future qualifications in work life, older workers without higher degrees will have a much harder time getting (attractive) jobs than those who do possess such a background. Among younger people, this variable will not be that crucial. This suggests that there is a powerful age-effect hampering the situation of older workers. Whilst today in most European countries the formal educational background of older people is still poorer than that of younger people (OECD, 1998), this ratio is anticipated to balance out rapidly as the older generations with the lowest levels of education exit the labour force. However, for the current lower-educated generations of older workers, especially the 'oldest' older workers (55+), the trend towards higher formal qualifications may function to discourage their future development.

Flexibility of working conditions, with less regulated human resources and a more

23

Table 3 The relationship between types of flexibilities on the supply side of labour market, competence needs, implications for older workers and contingencies in working life influencing the situation for this age group.

	Competence supply	Implications for the development of older workers	Contingencies
Flexibility of skills	Higher educated work force	Higher education as a crucial qualification	Future balance of skills and educational output.
Flexibility of working conditions	Deregulated human resources Bounded careers	Weakening security net Differentiated career paths	Laissez faire or institutional labour market policy

mobile workforce, means less job security and differentiation of career paths. While the total workforce will be influenced by this development, the impact on older workers may be stronger, because for them it means a change from long-held mind-sets to a new rationale. Research has shown that older workers are, on the one hand less mobile, but on the other more loyal towards their employers. However, a vision of more balanced working conditions between the younger and older generations in the future workplaces is possible from the point of view of health. Trends that have an impact to this direction are several, improving health by younger generations due to improved health care and less demanding job tasks (at least physically), as well as increasing attention to and investments in occupational health in workplaces – notably in the Nordic and some other European countries, as the most important ones. Forecasts concerning working conditions are difficult to be made, however, since regardless of improved overall health level among populations, there is a tendency towards increasing work-related health problems. Working conditions from the point of view of older workers are discussed further in the next chapter.

Older workers in the workplace

General working conditions

The working conditions in the 15 EU-countries have been monitored by the European Foundation for the Improvement of Living and Working Conditions (Paoli, 1997; Merllié & Paoli, 2000). The following is a summary of the results relevant to the situation of older workers in the workplace.

- For all age groups working conditions have been deteriorating during the last ten years due to increasing work-related health problems, intensification of work and flexible employment practices.
- With increasing age workers are in a slightly favourable position when it comes to physical demands, repetitiveness and degrees of freedom in job performance.
- Indicators of learning environment qualities (training, learning new things at work, rotating tasks, consultation, collegial discussions, work appraisal and use of computers) show small changes during the last ten years. Despite slogans like "workplace as a learning arena" there is evidence that the updating of the work force is increasingly achieved through formal training instead of developing systematic on-job-learning measures. This tendency may marginalize experienced workers.
- The age-group above 50 years is underrepresented in SMEs since entrepreneurial organisations are often populated by younger workers.

Competence updating and adjustment necessary to avoid marginalization

The most typical line of reasoning in relation to older workers in working life underlines their inadaquecies or obsolete competence

(Walker, 1996) and the need to adjust their competence accordingly to the demands of new forms of and tools for work, new ways of working, and changing working environments. This is, by and large, the core of the "problem" of older workers in workplaces. Taken that technological development and globalisation are the main driving forces of change and renewal in working life, the challenge posed for older workers is first and foremost, although not solely, to adjust their job competence to the demands set by new technology and its broader use in workplaces. Training and competence development is a typical means called for in this adjustment. At the moment, there is an abundance of various training and development programmes to be found in workplaces and they can be expected to increase. For example, in Finland the Working Life Barometer 1997 showed that almost 57 % of companies in industry, 49 % in private services, 51 % of municipalities and 52 % of workplaces run by the state have launched some kind of projects to enhance learning and development. However, there are not many training projects specifically addressing the situation of older workers (Linkola, 1998), although in many workplaces they are becoming a majority.

Another training-related problem for older workers is that training has not been developed from the point of view of participants with low levels of formal education and little experience in training, but rather to relatively experienced learners in formal settings. Considerable improvement in training for and of older workers can, however, be expected to take place in the near future. Such a conclusion may be made based on the variety of policy recommendations made by various actors addressing the situation of older workers in the 1990s (for an overview see Tikkanen, 1998c). A majority of these recommendations paid attention to improving the possibilities and preconditions for education and training for older workers.

When it comes to informal learning and competence maintenance and development at work, studies (van der Heijden, 1998; van der Heijden & Thijssen, 1998) have shown lack of stimulus and support to learning at work for older workers. Challenges in informal learning at work are discussed in more details later in this report (see chapter on Learning in the workplace). Older workers themselves tend to view their long work experience and corresponding competence through informal learning as their special strength (Tikkanen, 1997). The interest in and value of experiential knowledge has also increased in working life and adult education (Mulligan & Griffin, 1992), but paradoxically at the same time the value of most experienced workers has decreased in working life (Tikkanen, 1998a).

Adjusting new technology to match older workers

To counterbalance the demands of older workers to adjust to the demands of new technology, the report by the ETAN (European Technology Assessment Network) group underlined the importance of developing new technology to better match the end users and to provide more user friendly solutions. The group also underlined the importance of viewing the issue of ageing and the various solutions sought for the challenges it poses, as interconnected, as opposed to other developments taking place independently in society and working life. Underlining the leading impact of technological development on broader socio-economic development in society, the group suggests a range of priority areas for RTD&I (research, technology, development & innovation) signified by the ageing population. Examples of these areas are lifelong learning techniques; technologies and methods for new modes of flexible work organisation; design for age-neutral product and process technologies; and age-relevant ICT applications in work, domestic environment and support (The Ageing Population and Technology, 1998).

Advantages of increasing age in working life

Increasing age and experience in working life also has several advantages. Based on an overview of existing research, the following list of various improvements (advantages) by age has been compiled by the Finnish Institute of Occupational Health:

☐ Strategic thinking
☐ Becoming sharp-eyed
☐ Consideration
☐ Wisdom
☐ Ability to reflect
☐ Argumentation skills
☐ Coping skills
☐ Holistic perception
☐ Managing use of language
☐ High learning motivation
☐ Work commitment
☐ Loyalty towards the employer
☐ Less absenteeism
☐ Job experience

Summary

In summary, the situation concerning older workers in the workplace suggests strong ambivalence towards them; they are simultaneously valued but not valued, and tend to be viewed both as assets and as problems. Further, their levels of competence are seen as problematic and as a core issue in relation to their employability (recruitment and retention). However, support and motivation for their learning and competence development seems of lesser importance than that of younger workers. Given the increasing volume of older workers compared to the diminishing younger generations of employees, we can anticipate that sustainable organisational development will require more attention to be directed towards older workers, their learning and potential contribution to the workplace.

Changing careers

The social consequences of company competitiveness, accelerated by changes in working life as described in the previous chapter, are often most damaging to those sections of the workforce nearer the margins of the labour force and who are therefore the most vulnerable. The positioning of older workers on the margins tends to be the result of the demand for new or renewed competences and qualifications in the main sector of the labour force rather than sudden major changes in their abilities. Changes in thinking in relation to competences have also meant radical changes in thinking about careers. Again, these changes are likely to have a stronger impact on older workers than on their younger counterparts.

Discussions concerning career planning and older employees typically assume the bureaucratic system of occupational progression as a given (Ornstein & Isabella, 1993). This model has some prescriptive validity although it is rarely realised in practice. It has been observed that the recent interest of mid-life workers (around 45) in involvement in training is motivated by a strong anticipation of upward mobility (DeFilippi & Arthur, 1996). Thus, many proactively oriented mature employees who subscribe to this goal may end up facing a conflicting situation because of changing thinking on careers.

Boundaryless careers. The ideology of the vertical lifetime career is attracting less and less support. Generally speaking, the system of vertical and upward mobility is being replaced by a more diverse landscape of paths and fields. Careers have become 'boundaryless' (Arthur & Rousseau, 1996). Many of the success stories of boundaryless careers, however, stem from US working life, so we should be cautious when generalising them to a European setting, with lower labour force mobility and different systems of industrial relations (Hoftstede, 1984). Potentially however, this development could increase opportunities for older workers to satisfy their personal interests and capacities, provided that employers adopt a policy of 'laissez faire' in encouraging those who want to design their own future (Weick & Berlinger, 1989). For older workers, the notion of the boundaryless career can, however, bring both positive and negative prospects. On the one hand, highly experienced older workers who have invested a lot of time and energy in external contacts (customer, clients, other firms), may have developed valuable expertise in "knowing whom" (DeFilippi & Arthur, 1996) in a network economy (Porter, 1990). On the other hand, such a scenario is likely to provoke anxiety among those with limited opportunities within the labour market (Hirsch & Shanley, 1996), typically those who remain tied to poor educational opportunities and monotonous jobs.

Present generations of older workers may interpret the message to seek alternative pathways as a downgrading of their expertise and personal worth (Hall, 1986). They may also view a new start as an insurmountable barrier since careers are often irreversible and energy invested in them is lost ("sunk investments", Hirsch & Shanley, 1996). An examination of the contrast between attitudes to work of the present adult population and those of younger generations suggests that there is a reorientation towards the intrinsic value of work instead of towards career prospects in existing jobs (Lahn, 1996). This further suggests that new personal commitments and identities could be created around extended life projects which, for example, integrate a continuing pursuit of one's own interests with temporary assignments and collective learning processes (Lahn, 1993).

Competence of older workers and the new career thinking. If we look at career development possibilities among more mature workers, little evidence emerges from research concerning major competence problems among older workers as an obstacle to adopting this new way of thinking about, and practice of careers. Nor is there any research evidence that their self-reported willingness to develop their competence through participation in training and other forms of new learning would prove an obstacle for them in adopting this new career thinking. However, compared to younger workers, older workers have been shown to have lower occupational and geographical mobility (Kolari, 1989; Labour Force Mobility and Flexibility…, 1995) – that is, in relation both to willingness and actual practice. How such a difference is related to situational factors or to personal lifespan development and changing priorities is not well documented. In contrast, the role of structural factors in explaining these differences seems clear; they are also implicated in explanations of the fact that older workers are slower to adopt new thinking about careers. More precisely, a major influential factor is the general labour market and employment situation among older workers in particular although this situation varies somewhat across European countries. A related major factor is the attitudes mainly held not only by management, but also by younger colleagues, as well as those reflected in the prevailing cultural climate in society. These attitudes concern the role and status of older workers in working life (recruitment and retention) and in society generally and are powerful determinants of the current situation and options for development of older workers in the workplace (Kuhn, Taylor, Lunde, Mirabile & Reday-Mulvey, 1998). Furthermore, the options for and forms of training and development programs on offer are not always suitable and appropriate for older employees. Very few companies have tried to implement career planning policies specifically for middle-aged and older workers (Kuhn, et al., 1998). Training and development programs are also sometimes poorly co-ordinated with the practical demands of the workplace, notably the hectic pace of work. Issues related to training are discussed in more details later in this report.

Age-awareness and HRD in companies

Cultural transitions. Within the traditional approach to HRM and HRD, the age or maturity of employees has generally not been addressed as an issue. Interestingly, this situation can partly be accounted for by the traditionally "self-evident" high value of older workers in workplaces. The age of employees has traditionally only gained specific attention mainly in statistical, structural or economic terms. These views have, however, shifted somewhat over time and are related to changes in working life and society. These fluc-

Table 4 Phases in human resources management and their impact on perceptions of the value of older workers in the workplace (adapted from Tikkanen, Valkeavaara & Lunde, 1996)

Developmental phase	Knowledge authority	Source of learning and competence	Focus in personnel management	Future orientation	Value of older workers
Management phase 1970s	Management	Job experience	Job performance, loyalty	Stable	High among management
Expertise phase 1980s	Experts, specialists	Education and training (E&T)	Job performance, individual development	Linear growth, enthusiasm	Diminishing
Team-work phase 1990s	Teams of workers, consultants	Scientific knowledge, E&T development	Individual and organisational learning and	Controlled, sustainable growth views	Older workers as a problem, ambivalent
Intelligence/ competence phase 2000	Increasingly shared; "core teams", cooperation & partnerships	Multiple; scienti-fic knowledge, E&T, personality, job experience	Lifelong learning, training, personal growth and development	Unstable and uncertain, although growth anticipated	Increasing, age less of an issue

tuations are described in Table 4 in relation to a robust description of different phases in HRM in companies.

One framework that demonstrates how older workers are (still) being regarded in the workplace incorporates the traditional medical or deficiency model in which older age is traditionally viewed as involving a combination of sickness (lack of health) and other deficiencies. In the workplace, this is reflected in the expectations and attitudes of others. However, older workers themselves often "fulfil this prophecy" by viewing their current and future options within this framework. An area where this line of thinking has been most persistent is in learning and development, demonstrated in the negative stereotypes concerning older workers' learning ability and/or willingness to participate in training.

Whilst cultural changes concerning learning and development in the workplace context have already been taking place over a decade or more, the involvement of older workers has only recently begun to emerge (Tikkanen, 1998a), and is still very limited. This change is characterised in the last two phases in HRM as described in Table 4, as well as in the shift from the third to the fourth phases. Furthermore, apart from changes in work, jobs and working life more generally, another parallel and related cultural transition is taking place in the workplace. What can be discerned is a change from "old times" and the valuing of mature employees and their competence, to modern times, with new competence requirements and the perception that it is younger employees who are most likely to possess these. There still seems to be some ambivalence among management concerning this issue, as demonstrated particularly in views concerning the value of prior experience in the process of managing various jobs. In addition, views concerning partnerships with management as well as an increasingly shared and collective approach to knowledge and competence, pose new challenges to management regarding the status and role of older workers.

Emergence of age-awareness. Studies (Brunstein, 1995b; Pitkänen & Löfström, 1999a) have shown that management, and the personal perception a manager holds concerning his relationship with the older employee, as well as the prevailing organisational culture are the core factors affecting the situation of older workers in companies. Management's role is perhaps even more pronounced in small businesses (van den Tillaart, van den Berg & Warmerdam, 1998) than in big companies that tend to have more impersonal managerial-subordinate relationships. The results of a Leonardo-project **Lifelong Learning Enforcement and Empowerment of Older Workers** (LLEEO) showed that, whilst lack of formal training is a considerable problem for older workers in the labour market, an equally big problem is to be found in the attitudes of employers and management (www.dipoli.hut.fi/projektit/lleeo). A gradual recognition of this attitudinal problem has taken place, albeit far from consistently across all European countries. This concern has created a new concept, "age-management" (Juuti, 2001), and a new awareness of the age issue within HRM.

Integration or an exclusive focus on older workers? It has been seen that age-awareness in HRM and HRD has only recently started to develop. Referring to table 4 above, we could argue that this awareness has emerged in parallel to the increasing focus on competences, instead of on individual employees (e.g. currently competences are sought and bought, rather than employees). However, it is still the case that the literature that might help us to understand this point of view is very scarce, as are policies developed to address age-awareness both in the workplace and at national level. What makes the issue particularly problematic is that in raising the question of older workers as a special case in discussion and policy making, there is a risk of stigmatising them and thus of doing more harm than good to their cause (Walker, 1998). A related factor is that defining good practice in age management (Juuti, 2001; Linkola, 1999) is not without difficulties. The study on **Combating Age Barriers in Employment** (Walker, 1997) used five main dimensions to categorise aspects of good practice:

- job recruitment and exit
- training, development and promotion
- flexible working practice
- ergonomics
- job design
- changing attitudes and ageing workers (Walker, 1998).

All of these aspects are also very relevant to, and have been addressed in the WORKTOW-study. As a way forward, Walker (1998) suggests that any actions that aim to combat age barriers, whether labelled 'older worker' policies or more general HR policies, should be considered as good practice in this context. Furthermore, he proposes an integrated, comprehensive, lifelong-oriented approach as more useful and fruitful, rather than a separate, tightly older workers- focused approach with ad-hoc measures to address these issues. Lifelong learning and continuous training are central elements in such a strategy.

HRD and older workers in WORKTOW-countries

In table 5 below we have first briefly characterised the central issues in HRM and HRD in the WORKTOW-countries. The table is followed by brief descriptions of the national situations.

UK

In larger companies there is a growing emphasis on formal planned training and informal learning – and a need to develop a favourable climate in which to incorporate the principles of equality of opportunity. National initiatives are being launched to help SMEs to develop more effective workplace strategies, to help create a much stronger culture of lifelong learning in the UK and to support learning networks (National Skills Task Force, 2000).

It is therefore likely that the HRD-policies and practices in both large businesses and smaller companies will need to be subject to

Table 5 A summary of the HRM- and HRD-policies in companies in the WORKTOW countries

Countries	HRM & HRD policies in companies
UK	In larger companies a growing emphasis on formally planned training and informal learning – and a need to develop a favourable climate. National support of workplace learning in SMEs.
Finland	A combination of central initiatives and support of local developmental projects (largely ESF-supported) exists. Large national programs have created a high activity in HRD –although the projects in SMEs are often short-term, ideals are in contradicted in practice, competence evaluation tools are lacking and age-awareness among managers has only recently started to increase. State employer has outlined guidelines for senior policy. Ministry of Labour has provided a guide to age management in workplaces to make better use of existing competence.
Norway	Major initiatives in HRD taken at branch level and implemented in SMEs, but overviews of practice show a considerable gap between the "models" and actual practice. Only recently have issues of age been integrated into projects at company level. A national programme has recently been launched to enhance policy for seniors in workplaces.

periodic review in response to this pressure. It remains to be seen to what extent such changes, if implemented, will affect the climate of learning within companies and will arouse further interest in what is learnt, how it is being learnt, how that learning is planned and implemented and its outcomes at both individual and company level.

Finland

The following list addresses some of the most central age-related characteristics in HRM and HRD in Finland are (based on the summaries in Tikkanen, 2000a; 2000b):

- *The large governmental HRD-initiatives together with the European Social Fund (ESF)* are stimulating many activities at different levels – with a main focus on health and well-being, but increasingly extending to involve also job-competence (knowledge, skills, attitudes).
- A number of *ESF-projects are specifically targeted on older workers*, although studies show that it is still rare to explicitly address older workers in developmental projects (Linkola, 1998). However, the projects in SMEs are often short-term and narrow-focused (targeted) and ideals are in contradiction to practice.
- *Provision of, and participation in continuing training* is common also in SMEs and among workers aged 45+.
- *Tools for measuring broad, experience-based competence* and effective instructional methods are lacking and put experienced adult workers in a disadvantageous position. However, the national VET-system allows employees to gain accreditation and formal qualification for prior learning and competence gained through informal and non-formal learning in the workplace.
- *Age-awareness* among management has been low in most companies. The lack of systematic personnel policy in SMEs means poor, if any, documentation and recording of information concerning the staff.
- *Policies on seniors* very rarely exist in companies. Only very recently have some companies as well as the Ministry of Labour, become aware of and begun to pay attention to this area and to define policies and practice.

Norway

The government and the social partners have launched a National Competence Reform, within a broader framework of adult education. The reform is being implemented through a multitude of locally initiated developmental projects. However, overviews show a considerable gap between the "models" and implementation in practice.

Only recently have issues of age been integrated into projects at company level. This reorientation has resulted in initiatives aimed at the development of a "seniors" policy in both the public and private sectors – as well as in supporting measures taken by government and social partners.

Open and flexible training for adults has become a major area of political interest and business investment in Norway. Most of the discussion, however, has concentrated on financial arrangements and on establishing net-based information systems and a platform where providers and users can meet.

Participation of older workers in education and training

General trends

The OECD **Employment Outlook 1998** (pp. 128) showed that, among other matters, educational attainment among older workers will rise rapidly. Given the increased demand for more educated workers, rising educational attainment should ease the employment situation of older workers. The following is a summary of the most important contemporary issues and future challenges in research and policy concerning the participation of older workers in learning and education (Tikkanen, 1998a; 1998c).

1 Unbalanced participation. - *Participation decreases with increasing age*. Older workers are also less likely to get training provided by the employer, and less likely to participate in learning activities. Cross-national differences are notable, however.

2 Diversity in provision, problems in access. - Besides individual concern (e.g. learning skills, motivation, needs, time & other resources, health), *participation is a matter of supply (availability) and access* (social, cultural, geographical and economic barriers and incentives) to various learning options within an education and training system.

3 Education and training consultation and guidance is still difficult to find. The colourful system of training provision may be experienced as confusing and even threatening by poorly educated employees, as well as employers in SMEs.

4 Learning of older workers not an issue. - *Attitudes and the lack of, or obsolete factual knowledge of ageing play a part both among employers/ co-workers and older workers themselves* in discussion concerning participation of older workers in learning and training activities.

5 Job competence and productivity is the issue, not age as such. - From the point of view of working life, the participation of older workers should be considered in the *broader context of job organisation and the local and national labour market*, instead of solely focusing on age and other individual characteristics.

6 Fragmented policy and practice - *At the level of national policy making*, the participation of older workers in education and training is a complex matter located at the intersection of labour policy and educational policy and, to a degree, also related to social (pension) policy. An integrated policy is typically lacking and there is an ambiguity concerning the ends and means. However, some countries have recently started to develop more coherent policies towards older workers.

7 Need for comprehensive and cross-institutional learning interventions, locally and in developing provision (cross-disciplinary co-operation) - In addition to the integration of policies, it is important to pay attention to *integrated co-operation between different disciplines* (eg. adult education, sociology, economics, gerontology) when formulating principles and practice in relation to competence development interventions among older workers. A report on educational opportunities for older people (Douglas et al. 1990) concludes that the collaboration between different providers of various 'services' for older people should be encouraged to the full, ie. between formal institutions and informal organizations, and

between education and other sectors. The fact that the trainers and adult educators as well as management lack the knowledge about the best approaches and methods for learning enhancement among older workers, is highly relevant in the discussion about increasing the participation of this sector of the population in learning activities.

8 Enthusiasm for training of older workers – A European solution? - In the EC, increasing the participation of older workers in training is seen as crucial in the search for solutions to the challenge (more commonly referred to as 'problem') of older workers and the ageing workforce, as well as to the threat of social exclusion of this section of population. Most reports and policy papers suggest more training of older workers as the main solution to their labour market situation. In countries with high investment in training coupled with a difficult employment situation (e.g. in Finland), however, some indications exist that there is a strong negative age-effect prevailing over that of new training. Compared to younger people, training among older workers does appear to have lower impact on the status of older workers in the labour market.

Participation rates

Comparable statistics on older workers' participation in training in different European countries are not easily found, due to differences both in training systems and in the methodology used in documentation (statistical surveys). There has been *a major increase in participation in adult education* since the 1980s, but there are big differences between different countries. This development has been most pronounced in the Nordic countries. Table 6 shows the participation rates in the

Table 6 Participation rates in adult education in the EC and the Member States

Country	**Participation %**	**Country**	**Participation %**
Sweden	17.6	Germany	3.6
Finland	16.7	Italy	3.1
Denmark	16.2	Belgium	2.7
United Kingdom	11.8	Luxembourg	2.6
Netherlands	11.6	Spain	2.1
Austria	7.5	Portugal	2.1
EU15	5.6	France	1.6
Ireland	5.2	Greece	0.4

Source: EU Labour Force Survey, 1996. Eurostat, Luxembourg.

Table 7 Participation in job-related continuing education and training by age, 1994 - 1995

	Participation rate (%)	
Age group	**Total**	**Paid for by the employer**
15 – 24 years	38.8	16.0
25 – 44 years	35.6	25.7
45 – 54 years	30.8	22.6
55 – 64 years	23.3	17.4
Total	34.2	22.7

Source: OECD Employment Outlook (1998, p. 140).

EU and the Member States based on the EU Labour Force Survey from 1996.

Another characteristic in participation in training is that *most of it is work-related.* Table 7 shows the participation rates in job-related continuing education and training (CET) based on the IALS-survey by OECD. As table 7 shows, more than one third of the total working age population participated in job-related CET in 1994-95, and most of it was provided by employers. Table 7 shows also that participation is lower in older age groups.

In employer-provided training, the decrease in participation starts only after the age of 45 years. While the statistics showing a declining participation rate by age have typically been explained by age as a cause of this decline, a more plausible explanation is, however, educational background (Tikkanen, 1998b). When educational background is controlled, the age differences disappear for those under 60 years of age, whereas significant level effects (participation of the poorly educated is low in all age groups and of the highly educated high in all age groups) are revealed (Tikkanen, 1998b). This latter fact underlines the accumulation of human capital generally shown in studies on adult education.

Furthermore, *substantial variation in participation between countries can also be found* in continuing vocational education and training (CVET). In some countries – for example, in Finland and the USA – it is older workers (aged 45 – 54 years) who receive most of the job-related training. The **Eurostat Statistics** also show that in Sweden those employed and aged 40-49 have the highest participation rates in various training programmes. Given that, in these countries, older workers have also received less formal education than their younger counterparts, these findings suggest that the higher participation rates in job-related education among older workers actually works against the educational accumulation trend mentioned earlier.

Obstacles to participation among older workers

Stereotypical thinking among older workers underlies their lack of interest in new learning and development and appears to be the main obstacle to their participation in learning activities. However, statistics (Blomqvist et al. 1997) have shown that, apart from the hectic pace of work (among all employees), obstacles to participation in training among older workers (45+) are:

- suitable training not available (35.7 % mention this reason),
- difficulty in obtaining interesting training (33.8 %)
- training not provided (36.8 %).

Policies and practices of lifelong learning (LL)

Towards a coherent system of LL as a goal

Formal education and training has become more accessible to adults all over the Europe (Colardyn, 2001). The existing formal education and training systems in all countries, however, are limited from the perspective of lifelong learning. While they may allow access to citizens at any phase of their lives, they are insufficient to meet the current learning demands and needs of individuals, organisations and societies. In addition to lifelong access to formal learning opportunities, lifelong learning is increasingly seen as involving informal and non-formal forms of learning and participation. As a result, attention in governmental educational policy circles and in practice has turned towards realising the idea of lifelong learning and developing it into a coherent system linking different forms of learning in different learning domains at different stages of life (www2.trainingvillage.gr/etv/nonformal/).

Existing policies and practices narrowly focused on economic and vocational aspects

1996 was declared European Year of Lifelong Learning. Although notions of lifelong learning now inform educational policy debates in several European countries, the definition of lifelong learning is a complex one and a number of perspectives and alternative formulations can be distinguished in the extensive literature that has emerged around the concept (see Aspin and Chapman, 2000). The main line of critique towards the development until recently, as indicated within the range of EU and national policy documents that have been published, is that lifelong learning has a very clear economic imperative and it is narrowly focused on vocational education and learning.

Different European governments have attempted to demonstrate their commitment to the development of lifelong learning through a range of strategies that have included extending the duration of initial education, proposals for encouraging more young people to stay in the education system, reform of vocational education and training, efforts to widen participation in education at all levels and to reach previously disadvantaged and target groups. There has been a particular emphasis on partnerships between governments and the private sector and sometimes with trade unions as well as stress on the balance of responsibility among individuals, employers and the state. These policy developments suggest recognition of the importance of investment in human capital if businesses and nations are to be enabled to compete in the global economy.

However, there is also some evidence of an emerging perception that reliance on a narrow vocationalism may well be insufficient. For example, the idea of competence reform in Norway and the on-going changes in the UK post-compulsory education and training system both recognise the need to transform learning through a holistic response. The development of knowledge and skills is important for workplace learning but also for continuing individual development, to encourage creativity and innovation and to help build a cohesive society (DfEE, 1999). This kind of thinking comes closer to some of the more humanistic definitions of lifelong learning as a cradle-to-grave entitlement by which individuals are encouraged and enabled to continue learning throughout their lives.

What is in there for older workers?

In most European countries, through various conceptualisations of LL, assorted forms, contexts and alternatives for learning participation have existed for people in different phases of life, including the period when active working life is over. However, Tikkanen (1998a) has argued that older workers are the last ones to be involved in the discourse and practice of LL. This situation is, on the one hand, a result of the long held, though currently changing view that more experienced workers are more competent workers, and thus do not necessarily need to participate in training. The other side of this coin is that vocational education and training has only been targeted towards younger workers, given emphasis by traditional tripartite lifespan thinking (training/work/retirement). Furthermore some persistent negative stereotypes about learning at older ages have generally worked to exclude older people from learning activities. Finally, the focus on participation in formal learning activities has ignored the learning taking place in informal settings, and thus that among older workers. Many older workers still find it hard to grasp that learning taking place at work is as equally valid as that taking place in formal settings. Thus, although lifelong learning policies and practice have been developed in various countries for several decades now, older workers simply have not been an issue (Tikkanen, 1998a).

The situation started slowly to change towards the end of 1990s. Various policy documents emanating from the EU underlined the need to include older workers in LL, to provide learning opportunities for them, to develop new, more suitable learning methods for them, etc. The rationale behind these recommendations was that the solution to the problematic situation of older workers in the labour market is new learning, preferably in formal contexts. Thus, according to this rationale, one of the main reasons for the highly problematic situation of older workers in the European labour market was their job competence. Added to that, they lacked the social status conferred by formal training qualifications. Studies such as the 'Over 45'

(Mirabile, 1998) carried out under the Leonardo programme showed that, in the 1990s the situation of older workers in the context of LL was still problematic and varied vastly from one country to another, as did the national systems developed to enhance LL.

Later on, the discussion around LL has changed further to emphasise non-formal and informal learning and through various systems now being developed for accreditation of prior learning (Bjørnåvold, 1997; 2001). In principle, at any rate, this line of thinking should now finally involve older workers in the discourse of LL, and open new opportunities and visions for their learning and development in the context of working life. The future challenge may thus be in changing the old mindsets.

The European Commission has recently developed a new, coherent approach, complementary to the existing ones, in the Memorandum on Lifelong Learning (2000). The Memorandum underlines six key messages to provide a structured framework for debate, which concerned two issues: how to work together on a comprehensive lifelong learning strategy and how to put that into practice at all levels, recognizing the interests of all concerned (www2.trainingvillage.gr/etv/lll/). The key messages are:

- ☐ New basic skills for all (extending access)
- ☐ More investment in human resources
- ☐ Innovation in teaching and learning (extending contexts and methods)
- ☐ Valuing learning (extending towards informal and non-formal learning)
- ☐ Rethinking guidance and counselling (more information and advice)
- ☐ Bringing learning closer to home

The underlying rationale is not only national prosperity but also the development of an understanding of the rights and duties of citizenship leading to social cohesion and an informed awareness to enable individual choice from among a range of options for a satisfying lifestyle. In practice, it is likely that there is a complex interplay between these elements (Aspin and Chapman, 2000). Lifelong learning might therefore be seen as a multi-faceted process that extends from the compulsory phase of education and genuinely continues throughout life in a range of formal and informal contexts. In this way, workplace learning at whatever age can be seen as an important part of the overall vision. It is obvious that all the six key messages stand to greatly enhance learning and development opportunities for older workers.

Lifelong learning policies and practice in the WORKTOW countries

Table 8 briefly summarises the key developments and initiatives in the WORKTOW-countries in respect of LL policies and shows how they address the situation of older workers.

Learning in the workplace

Re-conceptualising learning and competence at work

In a rapidly changing work life, requirements for vocational education and training (VET) increase. Besides basic VET, continuing vocational education and training (CVET) and learning –most generally referred to as post-compulsory education and training - at work are required to maintain job competence. This requires the ability, willingness and motivation to learn continuously. Organisations are increasingly viewed as 'arenas for learning', 'learning environments' or 'learning communities' (e.g. Mulligan & Griffin, 1992). Competence is in constant flux.

Learning in the workplace as situational, contextual and constructive

Characteristics of research on work-based learning. Research on work-based learning has several characteristics. For example, it is cross disciplinary in nature, with important contributions coming from philosophy, history, management science, education, psychology, social anthropology, sociology, political science and economics. As a result, the

Table 8 A summary of the national training policies addressing older workers in the WORKTOW countries

Countries	Training of older workers: National policies
UK	The Kennedy (Committee) Report suggested that all firms (over 200 employees) set up their own learning centres – with reference to the results from the Employee Development Schemes.
Finland	The National Age Programme gives considerable attention to the development of learning and training possibilities for older workers. In practice the initiatives have involved efforts to actualise lifelong learning more generally. Approach to the learning of older workers has been one of integration. Whilst in initiatives for older workers main focus still is on health and well-being, attention to job-competence is increasing and some improvements have taken place, demonstrated e.g. in the increased participation rates of older workers in job-related education and training.
Norway	Reforms in continuous vocational training and adult education and training favouring non-formal learning and recognising the value of work experience. A major governmental initiative ("Krafttak") addressing the situation of older workers in the labour market has education and training measures as among the most important ones.

units of analysis differ considerably from one area to another. In WORKTOW we have focused on the analysis of interactional situations that contribute to the work-based learning of older workers - either as individuals or as members of groups – although local learning networks have also been touched upon. Other issues emerging from empirical studies within this field focus on formally organised learning or training, on the individual in learning and its outcomes (Ellström, 1996a; 1996b), on cognitively oriented theorising (learning as a transfer of information packages), and on survey methodology. Discussion around the necessity of lifelong learning (see chapter on policies and practices on lifelong learning earlier in this report), boosted mainly by continuous, far-reaching changes in technology and in working life, has resulted in a vertically and horizontally broadened approach to learning and competence development. Consequently, during the last decade or so, an increasing number of studies have emerged that focus on informal or tacit aspects in work-based learning (Coy, 1989; Chaiklin & Lave, 1993; Engeström & Middleton, 1996). Further, contextual (Järvinen & Poikela, 2001), situational and collective aspects (Billett, 2001; Billett & Boud, 2001; Ellström, 1996b) have been emphasised, as well as approaches that underline the need to develop coherent and comprehensive systems encompassing various forms and arenas of learning. In empirical studies, however, the latter tends to be addressed less often.

Learning as contextual, situational and constructive. The resulting dominant conception of learning acknowledges the situational, contextual and constructive perspective. Both the cognitive and contextual approaches to learning, nevertheless, have relative validity in relation to specific contexts of practice, rather than being dichotomies (see for example Ellström, 1996). The contextual approach, however, is likely to be more promising when studying informal aspects of learning. Billet (2001, pp. 32-22) has emphasised three situational factors as core issues for learning to take place in a workplace. Firstly, the situation provides the activities (that people engage in), the problems (to be solved), knowledge (to be constructed) and goals (for problem solving) for learning in the workplace. Secondly, there is direct guidance available in the workplace, which provides the basis for collaborative learning between the learner and more experienced workers. And thirdly, there is indirect guidance available in the workplace in the form of opportunities to observe other workers, and the physical workplace and tools for working.

36.

Some core characteristics in the approach, which has guided the WORKTOW project, are in line with the concept of learning described above. These characteristics are summarised as follows:

- *Learning in natural situations.* Learning takes place and can be observed in natural situations rather than within a laboratory setting. Thus it can also be enhanced outside institutional settings, and learning processes may be studied over time.
- *Tacit knowledge and its externalisation in actions.* The concept of knowledge is extended in the direction of tacit skills and adaptive routines. A great deal of learning takes place without individuals necessary being aware of it and assessing what they do[3]. Learning should be understood as externalisation (from actions to words, see Nonaka, 1996) rather than internalisation (from words to actions). The creative role of social processes is often underestimated when tacit skills are made explicit and articulated.
- *Focus on transfer.* Transfer of competence is a process of active reconstruction. Skills seldom spread themselves and transfer often takes place as a complex interaction between individuals. Differences in processing efficiency, however, cannot be considered independently of the knowledge domain in which they are being assessed (Ceci, 1990; Gardner & Sternberg, 1994). People may be adept and intelligent in one domain and inefficient in another. This relates to the problem of transfer: performance of individuals in their area of expertise cannot be predicted by their performance in another domain.
- *Contextual factors.* Tools, media, forms, and so on, play an important role in the learning process. Concepts such as "distributed cognition" underline the intimate relationship between human problem solving and related technologies.
- *Competence as constructed and collective.* Views and assessment concerning a competent worker in working life are not only tied to the workplace as such, but are interwoven with definitions within occupations, structures and contracts concerning wages, as well as the changing life situations of individual workers (Ellström, 1996b). Therefore, competence is only loosely intertwined with factual abilities and performance, but rather can be viewed as a result of a social construction process (Ellström, 1996a; 1996b). The same skills may be conceived as trivial in one context and as an indication of competence in another.
- *Multi-skills and meta-competences.* Human problem solving involves a multiplicity of skills, not only instrumental-technical abilities and competence. The collective aspect of competence requires constant use of communication skills and other social competences, involved in meta-competence (Nordhaug, 1991 – later in this report we discuss competence of older workers in SMEs).
- *Harmony and "power-play".* Workplaces do not just provide harmonious learning environments, but can also function as battlefields. The notion of the workplace as a contested terrain can be observed in the relationships between workers and management, within and between teams, in the division of labour and among affiliated groups, as well as being related to differences in gender, age and ethnicity (Billett, 2001). Consequently, distribution of opportunities for learning may not be equitable.
- *Intensive research design in case studies.* In research on learning in the workplace intensive (few units, many variables) designs are preferred to extensive (many units, few variables) ones, but these different approaches are complementary.

---

[3] It is not possible here to go deeply into the concept of learning. At this stage it suffices to point out that adaptive learning refers to a lasting change in behaviour, which does not necessarily imply an awareness of this change. A widely shared view among scholars in the field suggests that higher-order learning presupposes some reflection and assessment activities in relation to practice (Schön, 1983; Rolf, 1991). Later in this report we will discuss informal learning within the framework of work and age.

Little attention to learning and competence development among older workers or in SMEs

Small vs. big businesses as learning environments

The learning imperative resulting from technological development (Gavigan, 2000) has not impacted on companies or employees in equal measure (Tikkanen, 2001). Research on learning at work has focused extensively on large companies, which have better resources and HRD infrastructure (Gil et al., 1994). Studies have also demonstrated that learning processes in small companies are organized differently than in bigger ones and that SMEs as learning environments depend strongly on the skills of the small-business owners, in particular their entrepreneurial (external orientation) and managerial skills (internal orientation) (Tillaart et al., 1998). Based on the surveys of working conditions by the European Foundation (Paoli, 1997; Merllié & Paoli, 2000), we can conclude that SMEs offer a poorer learning environment for their employees than larger companies. SMEs as learning environments, generally speaking, are characterised by face-to-face interaction, a low degree of formalisation and a low rate of innovation. However the innovative qualities of smaller work organisations may not be easily discerned in quantitative studies. Furthermore, SMEs represent a highly eclectic field, one of the great divisions being between traditional and new occupational areas. SMEs in new occupational sectors are often competence-intensive work environments, where a number of pioneering innovations originate (Appelbaum & Batt, 1994). In contrast, those located in traditional sectors may still utilise old tools, traditional working methods and practices, their situation exacerbated in many cases by a poorly educated and ageing workforce.

Change and development projects in SMEs

While sheer variety in the range of existing SMEs poses a challenge to research that aims at generalisations, this very same characteristic means that these companies have the potential to contribute to the learning discourse involving companies and business world. Their advantage is that they provide a wide variety of products and technologies, learning by trial and error, a wider strategic horizon and a climate of entrepreneurship (Docherty, 1996). The shortcomings they display compared to many bigger companies include various barriers to learning such as a lack of training infrastructure (e.g. HRD personnel), negative attitudes towards formal training among managers and entrepreneurs, the individualistic nature of SMEs, and inadequate training methods (Gil et al., 1994).

It is therefore the case that competence development in SMEs tends to take place on an ad hoc basis, linked closely to various organisational changes. Continuous and systematic attention to learning and development is rare, and the manager is often the central player in these processes rather than the employee. Typically, change and development processes in SMEs are largely dependent on external competence, consultants and/or various training providers in the main. As these providers represent a very broad field and as learning and development interventions have become more common in companies, the question of evaluation of these processes has become a central issue in SMEs too, although so far relatively little addressed in practice. Such an evaluation is a complex process (Butler, 2001) and the framework and methods used for it are important in terms of outcomes.

In a Swedish regional development project *Development of operations and competence in small organisations* (2000) various developmental projects in SMEs were evaluated in terms of success factors. This evaluation showed that a successful development project needs to be functional on various levels; it has to produce affective, cognitive, behavioural, as well as organisational reactions. The success factors that were raised in the Swedish evaluation, summarised below, showed many of the issues covered also in WORKTOW:

☐ It is the organisation, not the consultant, who must be owner of the change processes.

☐ It is very important to choose the right kind of [change] activity, whether its aim to be in adaptation or development. Adaptation is a more common goal.

☐ The attitude of senior managers is decisive as to how the activity is performed – with or without the broad participation of employees.

☐ Change with broad participation can only be achieved if managers are ready to change.

☐ The goal of competence development can be to support the company's immediate, short-term needs, or to support long term development and expansion. A short-term approach is most typical.

☐ Competence development takes time. Change requires different types of learning.

☐ Development processes are required that are organic and not just organisational.

☐ Successful and far-reaching changes often require changes to the working organisation and an extension of responsibility and assignments.

☐ Daring to participate is closely linked to how managers view initiatives from staff and their commitment to making changes.

☐ Working together in the change process contributes to a better climate in the workplace and increases solidarity.

☐ Clearly expressed equality goals are required if the projects are to lead to increased gender equality.

☐ Knowledge, time and resources are required to develop competence and achieve change.

Competence and older workers in SMEs

Just as individual employees in SMEs in general can have more important and salient status than in bigger companies, so it is in the case of older workers. What is crucial is their competence, not their other qualities as such. More experienced workers in small companies can play a crucial role, since they are the conveyors of organisational memory and history, and possess a broader understanding of the company's location in the local business environment, and the networks of clients and suppliers, etc. Thus, their competence development is largely based on the organisational setting and the learning and development opportunities it has provided, the nature of their job tasks being a crucial variable.

Nordhaug (1991) has provided a competence typology, which is highly useful also for examining the competence of older workers in a changing working environment. The typology is shown in figure 2.

Figure 2 describes competence through two dimensions of competence: task specificity and firm specificity. The former refers to the extent competence can be used to solve a limited or a broad range of work tasks, and the latter to the degree to which it can be applied in one or several work organisations (Nordhaug, 1991, p. 165). While titles for domains II, III and IV are appropriately descriptive in relation to their contents, *meta-competence*, refers to broadly applicable competence across companies and tasks. Nordhaug defines it to represent

> *a kind of "infrastructural" knowledge, skills, and aptitudes on the individual level that are very important for work. Even though its range of application is difficult to confine, it forms a*

Figure 2 A Competence typology (Nordhaug, 1991)

		Firm Specificity	
		Low	High
Task specificity	Low	I Meta-competence	II Intraorganisational Competence
	High	III Standard Technical Competence	IV Unique Competence

> *foundation for work performance in general. The facts that meta-competences can be utilized across a large number of work tasks and also constitute a potential for contributing to the mastering of future tasks, mark that they are crucial for both individual and organizational performance.* (Nordhaug, 1991, pp. 167)

Meta-competence thus refers to a broad range of competences - for example, analytical aptitudes and skills, capacity to tolerate uncertainty, capacity to master changes, political skills, skills in handling conflicts, cooperative capabilities, planning skills, creativity, learning capacity, communication skills, proficiency in foreign languages, and reading and writing skills.

Applied to older workers, with typically long careers in one workplace, the typology helps us to analyse the developmental potential in their overall competence. The existing studies suggest that their strengths lie in particularly in domain IV, unique competence (high firm- and task-specificity), and in many areas in meta-competences (I) and in case of SMEs also in intra organisational competences (II). The challenges to their competence development, however, lie particularly in the transferability of skills across companies, in standard technical competence with high task specificity but low firm specificity (III). However, intra organisational and standard technical competence among older workers depends heavily on their job tasks and the variety in them throughout their career. Furthermore, meta-competences, one possible strength domain in older workers' overall competence, seem to develop through work experience and through informal and non-formal learning at work and importantly, contribute to flexibility and adaptability both at the level of employees and organisations (Nordhaug, 1991). Again, however, the outcomes depend strongly on the quality of work experience one has gained throughout one's career.

Older workers as learners

Learning from experience. Older workers tend to view their lengthy job experience as a special strength in respect of their professional competence (Tikkanen, 1997). This is not surprising since informal and non-formal learning from job experience is still the only job-related learning for a majority of them. In a Finnish Adult Education survey almost all (90-97 %) employees in all age groups above 30 years of age reported that their current job competence was very strongly based on their work experience, while less than half attributed it to training (Blomqvist et al., 1997). Nevertheless, lengthy job-experience, combined with advanced age, is in many cases a problem, not an asset, in current working life. This state of affairs demonstrates the existence of a gap between theory and practice - or rather the differences in theorising among different stakeholders. Paradoxically, at the same time as the interest in and value of experiential knowledge and informal learning has increased in working life and in adult education (Mulligan & Griffin, 1992), the value of the most experienced workers has decreased in working life (Tikkanen, 1998a). There is clearly a need to strive for more specificity about the value of job experience as raw material for informal learning and how that contributes to professional competence.

Self-direction in learning among older adults. Informal learning at work is often self-directed, like most adult learning. The concept of self-directed learning, however, is not clearly defined. Self-directed learning in the world of work differs depending on the occupational context and may be perceived differently by the different people working there (Straka, 1997). Further, the usefulness of this approach among learners with low educational levels is more problematic than among more experienced learners. Although the competence, which older workers have gained through their work experience, has been largely "learned by themselves", it is an open question how consciously aware they have been of this learning, and thus how goal-oriented it has actually been. Rather, older workers tend to look back on their careers in terms of work rather than learning. Yet, when asked, they are aware that a considerable amount of learning has been required and has taken place in order for them to acquire the competence they possess.

Analysing job performance

Learning and developmental needs and motivation originate from job performance, whether considered individually or on an organisational level. Warr (1995) distinguishes three main components in job performance; a) physical ability, b) adaptability and; c) general work effectiveness. To enable a greater understanding of the strengths and limitations of older employees, Warr (1995; 1998) provides one point of departure. He reports that findings from over 100 studies show that there are no significant differences in the job performance of older and younger workers. Rather, the primary practical developmental need is considered to be the implementation of procedures that enhance adaptability among older employees. The absence of an overall age effect in the level of job performance contrasts sharply with laboratory evidence of very clear age decrements in many forms of information processing. It is also inconsistent with a widespread negative stereotype about older workers. More knowledge about the processes underlying these observations is needed, as well as on how different functions change with age, how these changes interact and how they affect the lives and the potential of older people. Knowledge at individual level should also be tied to the context of work, such as, for example, the nature of jobs and organisational factors.

Table 9 below describes multi-level factor effects on work performance and work-based learning. This outline has guided the contextual analysis of job performance and learning of older workers in WORKTOW.

This approach to contextual factors broadly covers national, institutional and cultural characteristics as well as issues related to various occupational branches and companies as learning environments. Context is also important from the point of view of providing learning stimulus and creating learning needs as well as providing support for learning. As pointed out earlier, most of the research on learning and older workers has focused on individual learning and the acquisition of instrumental skills. There is a need to develop coherent and comprehensive frameworks for learning, which integrate socio-cognitive development, job performance and organisational variables and different training regimes. A purpose of the WORTOW-project was to contribute to this development.

Work processes have been approached from the point of view of demands of job tasks and appropriate mental models formulated on that basis, resulting in specific ways of performing the job. Satisfaction in one's job performance is central and requires

Table 9 Multi-level factors effecting work performance and work-based learning

Levels	**Factors effecting work-performance and work-based learning**
Context of work-based learning	Institutional and cultural context: National systems, job organisations, job sectors and branches ➢ Support to learning ➢ Stimulus and challenges to learning and development
Work processes	Demands of job tasks ➢ Mental models of job tasks ➢ Job performances ➢ Learning of new tasks
Individual	Personal characteristics ➢ Expertise ➢ Risk taking ➢ Motivation ➢ Learning strategies

both internal and external feedback systems in the workplace. When tasks are not performed to one's satisfaction, or when learning is externally stimulated, for example by introducing new tasks, adjustment will take place and over time new skills are learned.

In the following section, we describe briefly how work processes and individual characteristics relate to ageing of the workers and their work performance.

Work processes

Demands of job tasks. Declines in information processing are most pronounced in complex tasks (Salthouse, 1996), performed under time pressure (Craik et al., 1992), and in those progressing though many successive mental operations. However, actual job performance may require different skills for different parts of the job. For example office workers are not only carrying out copying and editing work on the computer. They are involved in archival tasks, communication with colleagues or clients and in organising meetings.

When it comes to informal learning and competence maintenance and development at work, studies (van der Heijden, 1998; van der Heijden & Thijssen, 1998) have shown lack of stimulus and support for learning at work for older workers in the workplace. Through their lengthy work experience job tasks have become "overlearned" and highly routinized and as new, more challenging and demanding tasks are not provided, new learning is no longer stimulated. Nor do the routinized job tasks challenge them to demonstrate the whole range of job-competence they may possess (Löfström & Pitkänen, 1999). In such a situation, participation in training with the object of learning new skills or acquiring new knowledge has no point either. Further, there is a scarcity and, indeed, often a complete absence of managerial actions designed to stimulate older employees' development, flexibility and versatility.

In addition to time pressures, demands at work increasingly focus on interpersonal skills and other meta-competences. Older workers particularly have been found to have strengths in these areas and hence find their work less demanding (Kirjonen, 1994; Pursio, 2000; Stenberg, 2000). A study among engineers and technicians (Rasku, Feldt & Ruoppila, 1997) showed that personal human resources - feelings of life being coherent and understandable, of being in control and being able to make sense of things – were strongest among older workers, and were positively related to perceiving oneself as a competent employee.

Mental models of job task. Task performance can be interpreted in different ways and assimilated into individual preferences and abilities. It seems likely, however, that older workers demonstrate different styles from younger ones. Thus, we expect to find age related strategies developed along the following dimensions:

- *Use of routine performance.* Experienced workers are likely to demonstrate complex performance and direct more attention towards higher mental processing.
- *Elaboration of expertise.* The performance of older professionals may exceed that of younger colleagues because they have developed a repertoire of domain-specific skills, which also include characteristics such as holistic and contextual judgement ("wisdom").
- *Planning procedures and sequencing of complex action.* In complex task environments older workers tend to reduce mental load by careful planning and sequencing of actions.
- *Use of environmental cues.* With increased experience workers not only use their physical environments as "mental protheses" for task performance, but there is an active construction of "tools" that are formalised in the process of adaptation. In non-routine situations previously completed jobs or the layout of the workplace can be used as models, cues and clues for how to proceed in the construction of new knowledge (Billett, 2001).

Individual variables

Expertise, risk taking and motivation. Although a high correlation is found between expertise and age, with task experience as a mediating variable, there are few studies on how different types of expertise and age profiles can support or hinder the transfer of knowledge and skills to new domains. In addition, the role of individual differences in risk taking and motivation is poorly understood.

Learning and learning strategies. Several issues can be raised when examining the learning of older workers. A major distinction should be made between learning new skills within the expert domain of experienced professionals and learning in a radically different expert domain. The content of learning is also relevant to this discussion. Most studies have focused on learning of technical-instrumental (cognitive) skills, whereas the acquisition of meta-competence (see Figure 2 on page 28), for example social competence, is less well understood. Bearing these reservations in mind, the following issues are central when addressing learning in relation to older workers.

- *Low motivation for learning new tasks* among older workers is frequently reported in studies. This can be attributed to several factors: their low levels of formal training, lack of training opportunities, the absence of a learning culture, employers' or older employees' perception of low return on investments in training for older employees, attitudes towards learning at an older age and a lack of self-confidence.
- *Enhanced motivation with participation in training.* There is evidence that older workers taking part in training compare well to younger workers by becoming more motivated towards new learning (Warr, 1998).
- *Transfer of learning.* Some reviewers like Warr (1998) are rather pessimistic about the ability of older workers to transfer skills from training settings into the workplace. Some of these barriers however, could be overcome by proper age-aware or age-sensitive training (see below) and by systematic opportunities for application and extension of skills in work. These qualities are linked to the learning environment in companies. From the point of view of informal learning in the workplace "far transfer" (to a new situation), as opposed to "near transfer", may be a problem in non-routine situations (Royer, 1979). In this context more experienced workers can be at an advantage because they face novel workplace tasks less frequently than novices (Billett, 2001).
- *Learning strategies among older workers.* Considering the qualitative differences in observed task performance among age groups, there are surprisingly few studies of learning strategies among older people in a professional context.
- *Age-aware training.* Studies (reviewed in Warr, 1998) support the conclusion that older employees should be involved in learning activities that they can follow at their own pace. Early tokens of success and feedback may boost their self-confidence. Different formats for guiding and self-monitoring are recommended (Czaja, 1996). Another strategy, potentially beneficial for experienced employees, is to combine learning activities and practical problem solving, for example in organising project work, where older workers can extend their expertise to related fields.

Empirical studies

III Survey on SMEs as learning environments

Companies and employees participating in the study

A total of 27 companies participated in WORKTOW. As Table 10 shows, most of these were from Finland and England, while the two Norwegian partners together recruited eight companies. Table 10 also shows how the employees (n=378) and employers/managers (n=37) who filled in the base-line questionnaires in these companies were distributed among partners. The number of employees participating in the whole study, however, is greater than the number of returned questionnaires. This is accounted for by the fact that in the returns from some WORKTOW-partners, the learning interventions in the companies included all the employees.

Table 10 Companies, employees and employers/managers participating in the study by partner

Partner	Companies		Employees		Employers/managers	
	N	%	N	%	N	%
Jyväskylä	7	26	167	44	9	24
Keele	6	22	91	24	7	19
Lancaster	6	22	29	8	8	22
NOVA	2	7	14	4	1	3
WRI	4	16	54	14	9	24
WRI/NOVA	2	7	23	6	3	8
Total	27	100	378	100	37	100

Table 11 Description of the companies (n=27) participating in WORKTOW as described by employers/managers (n =37)

Variable		N	%
Type of work	Manual	9	8
	Service	12	73
	Office	6	19
Field	Manufacturing	2	6
	Construction	1	3
	Wholesale, retail	4	11
	Hotel, leisure, restaurants	11	30
	Financing, insurance, real estate, business services	4	11
	Community, social and personal services	13	36
	Other	1	3
Size	1 - 30 employees	8	27
	31 – 50 employees	7	24
	51 – 100 employees	4	14
	101 – 200 employees	7	24
	201 – 500 employees	2	7
	501+ employees	1	4

Characteristics of the companies. Table 11 shows background information about the companies as described in the questionnaires by the employers/managers. The majority (73 %) of the companies represented service/communication work in the fields of community, social and personal services (36 %) as well as hotel, leisure, and restaurants (30 %). There was a strong connection between a partner institute and type of work ($\chi^2 p<.001$). Most companies with manual workers were recruited by WRI alone (61.7 %) or together with WRI/NOVA (13.3 %). Service work was mainly represented in companies investigated by Keele (40.8 %) and Lancaster (14.1 %), while almost all companies/employees representing office work were recruited by Jyväskylä (92 %).

Characteristics of the employees. The mean age of the employees was 39.4 years. On average

Table 12 Description of employees participating in WORKTOW questionnaire survey (%)

Variable		All N=378	Below 45 yrs n=249	45+ yrs n=129	X^2Sig[1]
Gender	Female (n=203)	53.7	53.4	54.3	
	Male (n=175)	46.3	46.6	45.7	
Education	No VET (n=73)	20.1	18.9	22.5	
	Lower VET (n=143)[A]	39.3	39.8	38.3	
	Higher VET (n=148)[B]	40.7	41.4	39.2	
Position held	0-2 yrs	44.8	51.1	33.6	***
	3-5 yrs	22.8	24.2	20.3	
	6-10 yrs	18.7	19.0	18.0	
	11-15 yrs	7.5	3.9	14.1	
	16-20 yrs	3.3	1.3	7.0	
	21 - yrs	2.8	0.4	7.0	
Other positions held in the company (yes)		34.5	33.3	36.8	
Applied for other jobs (yes)		18.9	26.0	5.4	***
Lifetime employment	0-2 yrs	5.6	8.8	-	***
	3-5 yrs	8.3	12.5	-	
	6-10 yrs	14.1	20.4	1.7	
	11-15 yrs	13.6	20.0	0.8	
	16-20 yrs	15.5	20.8	5.0	
	21 - yrs	42.7	17.5	92.6	
Job contract	Full time (n=295)	78.5	77.8	79.7	
	Part-time (n=53)	14.1	13.3	15.6	
	Temporary (n=11)	2.9	3.6	1.6	
	Agency (n=1)	0.3	0.4	-	
	Other (n=16)	4.3	4.8	3.1	
Partner	Jyväskylä (n=167)	44.2	43.4	44.7	***
	Keele (n=91)	24.1	26.5	19.4	
	Lancaster (n=29)	7.7	6.4	10.1	
	NOVA (n=14)	3.7	0.8	9.3	
	WRI (n=54)	14.3	17.7	7.8	
	WRI/NOVA (n=23)	6.1	5.2	7.8	
Type of work	Manual	15.9	17.3	13.2	
	Service	54.5	53.8	55.8	
	Office	29.6	28.9	31.0	

[1] *** p<.001; [A] Max of 2-3 years vocational training; [B] college or university degree

Table 13 Employees grouped by work type and age (N=378)

	Manual		Service		Office		All	
	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs
Frequency	43	17	134	72	72	40	249	129
%	11.4	4.5	35.4	19.0	19.0	10.6	65.9	34.1

they had held their current position in their companies for 5.2 years, whilst they had been employed during their lifetime for an average of 18.9 years. Table 12 shows a description of the employees' data, separately for the younger (below 45 years) and older (45 and above) workers. Close to one out of five had applied for other jobs, but younger workers significantly (p<.001) more often (26 %) than older (5.4 %)

On describing the results in this report

Description of the results in this report. The results of the employee data have been described following the WORKTOW criteria for selection of the companies in the study. Hence the results have been described by comparison of six groups, two age groups (younger/older) representing three work types. Table 13 shows how the employees were distributed to these six comparison groups. Younger service workers formed the biggest group, counting for 35 % (n=134) of all participants, and older industry workers the smallest group (4.5 %).

Results

Organisational context for learning of older workers

This part of the description of the results is based on employers' and managers' descriptions of their companies regarding what kind of context they provide for workplace learning for employees.

Age-structure

Table 14 shows the age structure as described by managers (involves all employees) in the WORKTOW-companies for men and women separately for the three different work types. Women were over-represented in the youngest age group, while the proportion of older workers was the same among men

Table 14 Age-structure and recent changes in it in the WORKTOW-companies by type of work (%)

		Industrial	Service	Office	Total
Age/gender –structure					
Females	16 – 30 years	25.9	32.7	6.4	26.3
	31 – 44 years	17.7	37.5	29.7	33.5
	45 – 65 years	6.7	19.0	27.1	19.7
Males	16 – 30 years	19.3	22.3	13.7	19.8
	31 – 44 years	38.3	18.6	45.9	29.0
	45 – 65 years	25.3	13.4	32.0	19.8
Changes in age-structure		100	73	33	67
Nature of age-changes					
	Younger average age	*	14	100	25
	Older average age	*	86	-	75

* Missing data

and women. Female employees were youngest in industry and services and oldest in office work. In the latter 27 % were above 45 years of age. Among men the majority of the oldest were also found in office work (32 %) but close to that in industry too.

Changes in age-structure were most common in industry (reported in all companies), but also in services (73 %). The nature of these changes was different in different sectors so that whilst in industry and services, the average age had increased, in information work the tendency was towards younger workers.

Recent major changes in companies

Major changes had been most common in industrial companies. Most typical changes had been increased investments in training (especially in services), development of quality systems (most pronounced in industry), and changes in product and market (especially in office work). An impact of these changes specifically on older workers was reported only in industry, while a majority of employers/managers representing other work types felt that the changes had had no impact on older workers, or else they were unable to say.

HRD and training

In personnel development and training there were considerable differences between the WORKTOW-companies, as Table 15 shows. Companies in the service sector had the best-developed systems in this area. Most typically the training provided by the company was carried out as on-the-job training, and trainers used were company staff.

An older worker. According to management/supervisors, employees were considered to be older workers in these companies on average at the age of 50 years. The age limit expressed in manual work was the highest, 55 years, and almost the same in information work, 53 years, while in services it was 48 years.

Too old to learn. A majority of the management thought that there were no age-limits as to when the (non-managerial) workers would be considered to be too old to learn new skills in the company. This opinion was expressed most strongly in the service sector work (91 %), whereas a half of management in both industrial and office work thought there were no age-limits. In industrial work those who

Table 15 HRD and training in companies by type of work (% yes)

HRD/training element in a company	Industrial	Service	Office	Total
A training budget	33	83	43	70
A written training plan	33	88	14	68
A mentoring system	-	50	14	38
A written commitment to developing all the employees	67	54	57	56
One person, who has strategic responsibility for training	33	88	67	79
A written policy of equal opportunity for all age groups	33	61	29	51
Training provided by the company carried out				
mainly on-the-job	50	37	57	43
mainly outside the work place	-	16	-	11
off the job, but on company premises	-	10	-	7
evenly among all the alternatives	50	37	43	39
Trainers the company uses (% often or always):				
company staff	67	92	86	89
trainers from local training institutions	33	33	-	27
customers or suppliers	33	32	40	33
experts from consulting agencies	33	14	20	17
other experts	-	25	50	30

expressed an age-limit described it as 55 years, and in office work, age limits of 55 and 60 years were given.

Employees' views of SMEs as learning environments

This chapter shows how employees described WORKTOW companies as learning environments.

Work complexity and learning opportunities

Table 16 shows how the employees in WORKTOW-companies described the complexity of their work and the stimulus and opportunities it provided for their learning. There were major differences with regard to most aspects among the six groups under consideration here. These differences were partly separate age- and work type –effects and partly joint effects of these two.

Work load. Work situation was most often reported to be hectic in office work, whilst in industry and services it was rather similar and reported less than in office work. The differences found between these groups were between sectors, but not age groups (ANOVA p<.01). Regardless of the hectic pace of work the experiences of stress were less common, most typically to a little or some extent. In office work stress was reported somewhat more often than in the other two types of work, but the difference was not statistically significant. Again differences were most pronounced between sectors, but not by age groups.

Pace of work. Deadlines, customers and fixed routines were most often found to be controlling the pace of work. However, major differences were found by age and work type. Work type, but not age, contributed

Table 16 Work complexity and learning opportunities by work type and age group (Means), N=378

	Manual		Service		Office		Sig¹	All² (Sig)	
	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs		- 45 yrs	45+ yrs
Work complexity									
So *much work* that – work situation is ...hectic	2.8	2.8	2.9	2.9	3.3	3.3	**	3.0	3.0
...stressful	2.5	2.4	2.5	2.5	2.7	2.7	n.s.	2.6	2.5
Pace of work is controlled by ...deadlines	3.6	3.5	2.7	2.7	3.5	3.7	***	3.1	3.1
...colleagues	2.9	2.4	2.9	2.5	2.5	2.4	***	2.8	2.4(**)
...customers	3.0	2.3	3.4	3.3	3.3	2.9	***	3.3	3.0(**)
...machines	3.3	2.5	2.4	2.0	2.4	2.0	***	2.5	2.1(***)
...management	2.8	3.1	3.1	3.0	2.5	2.3	***	2.9	2.8
...repetitive tasks	3.1	3.0	2.8	2.7	2.7	2.4	n.s.	2.8	2.7
...fixed routines	3.2	3.4	3.1	3.0	2.7	2.6	***	3.0	2.9
Learning opportunities									
New problems and challenges in job	3.0	2.4	2.8	2.9	3.3	3.4	***	3.0	3.0
Use of computer	2.5	1.5	2.4	2.6	3.8	3.5	***	2.9	2.8
Possibilities for participation in major decisions affecting one's job	2.7	2.4	2.5	2.5	3.0	3.1	***	2.7	2.7
Participation in decision making	3.1	3.3	2.8	2.7	3.0	3.1	n.s.	2.9	2.9

¹ ANOVA Sig *<.05, **<.01, ***<.001; *Scale used:* 1= Not at all, 2 = To a little extent, 3 = To some extent, 4 = To a large extent; ² ANOVA between age groups Sig **<.01, ***<.001

BEST COPY AVAILABLE

to most of the differences in control by deadlines, management, and repetitive tasks and routines. Whilst manual and office work were highly controlled by deadlines, in service work, customers and management, but to some extent also fixed routines were the strongest controllers.

Compared to younger workers, older ones reported, in general, less control by various factors listed in the questionnaire, the difference being most notable in manual work. As shown in table 16, age differences were greatest concerning control by machines ($p<.001$), colleagues ($p<.01$), and customers ($p<.01$). There were joint age - work type effects so that control by machines was most strongly experienced among the young manual workers (mean 3.3) and least by older workers in services and office work. Further, in control by customers the differences were greatest among older workers representing different work types, the least in industry (mean 2.3) and most in services (mean 3.3). The differences in control by fixed routines were also greater across the work types and among the older than younger workers.

Learning opportunities. Overall, employees reported that their jobs provided learning opportunities on average "to some extent" (Table 16). Whilst there were no direct age effects in how work was considered to provide these opportunities and possibilities for participation in decision making concerning one's job, major differences were found depending on work type, but some resulting also from the joint effects of age and work type. Employees in information work reported these opportunities to be the best. However, it was not they but the employees in manual work, who most often participated in decision-making in their workplaces. These differences, hiwecver, were not startistically different. The differences were greater among the older workers than among their younger colleagues across the different work types, in particular in the use of computers.

Job competence

In general, a majority of the employees (57-91 %) rated the possibilities of using and developing their competence in their job as strong or very strong. The only exception was the overall opportunities to participate in education and training (37 %). The strongest possibilities were to use their experience-based competence in their job (91 % strong or very strong). The results are shown by age and work type in table 17.

Older workers tended to view these opportunities somewhat more optimistically than the younger workers did, but the overall age-differences were not statistically significant. The differences by work type and joint effects of age and work type were strong, especially for some possibilities. The age-differences were smallest within service work and the greatest within manual work.

Training opportunities and the opportunity of developing professional skills in the areas one wishes were reported to be the least of all possibilities mentioned. Although they were particularly low for some groups this was only concerning overall possibilities for continuing vocational education and training (CVET). For necessary training and developing professional skills in areas one wishes, the age-differences were most notable in manual work (49 % of younger vs. 73 % of older) but also in office work. Another difference concerning these possibilities – and in contrast to the general tendency mentioned earlier - was that younger workers estimated their possibilities of obtaining necessary training to be much better than the older workers did (difference 36.6 percentage units). Similarly, in obtaining advice and counselling and CVET, younger workers, especially in manual work, reported much better possibilities than their older counterparts.

Time it takes to learn one's job tasks. Most typically (27.8 %) the time the respondents rated it would take for a new worker with a required basic training to learn one's job, was a few months or a few weeks (21.6 %). There were no statistically significant

Table 17 Possibilities of competence use and development in one's job (% 'strong' or 'very strong'), N= 378

Possibilities to...	Manual		Service		Office		X^2Sig[1]	All	
	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs		- 45 yrs	45+ yrs
...use the competence gained through education and training	68.3	93.3	70.3	73.3	83.3	77.5	n.s.	73.8	77.0
...use the competence gained through work experience	90.3	93.8	87.0	90.0	97.3	95.0	**	90.6	92.1
...develop professional skills in the areas one wants	48.7	73.3	62.9	62.1	41.6	55.0	*	54.3	61.2
...get advice and counselling when working with difficult tasks	82.9	64.2	68.5	67.6	69.0	60.0	*	71.7	64.8
...get the necessary training to perform one's work to one's own satisfaction	70.0	33.4	71.5	70.2	42.2	55.0	***	62.6	60.6
...participate in education and training (overall)	44.5	33.3	43.3	54.8	17.9	23.1	***	35.1	41.3

[1] *<.05, **<.01, ***<.001; *Scale used:* 1= Not strong at all, 2 = Not very strong, 3 = Strong, 4 = Very strong

age differences, but gender differences and those between the three work types were clear (both at $\chi^2 p<.001$). Males reported that it would take a longer time than women did, so that 40 % of the former and 15 % of the latter thought the time would be from one to several years. While almost a half (46 %) of the women responded that it would take a few weeks at the most to learn their job, only 18 % of the males did so.

Employees in service work rated this time to be the shortest: 23 % a few days at most, younger workers even more so (27 %) than the older workers (17 %). The respective percentage in manual work was 5.1 and in office work only 1.8. Of the office workers almost a half (44.5 %) thought it would take from one to several years to learn their job, the older workers even more so (49 %). The respective percentage in manual work was 22 % and in service 15.7 %, but unlike in office work, in both of these sectors younger workers more often assumed a longer period of time.

Participation in training & training consequences

Participation rates. Table 18 describes participation of employees in different forms of training in WORKTOW-companies. A large majority of the employees (78 %) had participated in some form of training during the last three years. Participation was most common in on-the-job (46 %) and formal (45 %) training. Overall, younger workers had participated somewhat more than the older (81 % vs. 73 %, p<.05). With regard to different forms of training, statistically significant age-differences were only found in formal training (50 % of younger vs. 34 % of older, χ p<.01).

Participation varied again between the different work types and as a result of the joint effects of age and work type (table 18). Employees in manual work, in both age groups, had participated almost only in formal training, and in this form of training their participation rates were the highest of all the three work types. Interestingly however, these differences in formal training participation were most pronounced among younger

Table18 Participation (%) in formal, non-formal and on-the-job-training (N=378)[1]

	Manual		Service		Office		χ^2Sig[2]	All (χ^2Sig)[3]	
Form of training	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs		- 45 yrs	45+ yrs
Formal education/courses									
Participation (%yes)	58.1	35.3	51.5	33.8	43.1	34.4	*	50.2	34.4(**)
Employer paid (%yes)	66.7	100	68.2	79.2	65.5	57.1		67.2	75.0(*)
On own initiative (yes)	76.2	33.3	81.1	66.7	75.0	100		79.5	66.7
Length (mean, weeks)	39.4	3.6	17.4	10.7	14.4	3.3	**	20.4	7.4(*)
Less than a week	13.6	25.0	13.1	13.0	10.3	18.2		12.5	15.8
1-9 weeks	36.4	50.0	37.7	43.5	48.3	36.4		40.2	42.1
10-39 weeks	4.5	-	19.7	13.0	24.1	45.5		17.9	21.1
40 weeks	45.5	25.0	29.5	30.4	17.2	-		29.5	21.1
Non-formal & non-credit courses									
Participation (%yes)	12.8	0.0	47.4	51.5	37.5	35.0	***	38.9	39.5
Employer paid (%yes)	75.0	-	84.4	94.4	66.7	92.9	*	78.9	94.0(*)
Length (mean, weeks)	0.0	0.0	1.2	2.3	1.0	0.4		0.9	1.3
Less than a week	75.0	-	37.0	23.3	42.9	46.2		40.5	30.2
1-9 weeks	25.0	-	53.7	63.3	52.4	53.8		51.9	60.5
10 weeks or more	0.0	-	9.3	13.3	4.8	0.0		7.6	8.2
On-the-job training									
Participation (yes)	27.5	0.0	44.0	52.2	64.3	42.5	***	42.7	42.3
Length (mean, hours)	15.9	0.0	22.0	7.2	13.9	6.2		18.3	5.7
1-7 hours	16.7	-	53.8	44.4	20.0	37.5		35.3	41.9
8-14 hours	0.0	-	23.1	18.5	25.0	18.8		22.4	18.6
15-35 hours	33.3	-	15.4	29.6	37.5	31.3		27.1	30.2
35 + hours	50.0	-	7.7	7.4	17.5	12.5		15.3	9.3

[1] Details of participation shown as a percentage of those participated; [2] *<.05, **<.01, ***<.001; [3] Between age groups Sig **<.01, ***<.001

workers, whereas among the older they were very small.

Major age-differences in participation were found in all forms of training in manual work, only in formal training in services, and only in on-the-job training in office work. In all cases the younger employees participated more. However, in services, older employees had participated somewhat more in non-formal and in-formal training. Cross-sectoral differences were most pronounced in non-formal, but also in formal training.

In *formal training* participation rates were about the same for older workers across work types, but varied somewhat for younger workers. Furthermore, compared to older workers the participation rates among younger employees were higher, being highest among the manual workers (58.1 %) and lowest among the office workers (43.1 %).

Participation in *non-formal training* varied by work types and was lowest among manual workers (Table 18). Among the latter, only the younger workers had participated (12.8 %). In service work, the opposite to what was the case in formal training was found. In non-formal training it was the older employees who had participated more than their younger counterparts. There were no age-differences in office work. The level of participation was highest among the service sector employees, and highest of all the groups among the older service workers (51.5 %).

Of all the three forms of training, participation in *on-the-job learning* activities was most typical in the office sector. Of the younger employees close to two thirds (64.3 %) had participated in this during the last 12 months, but less than half of the older ones (42.5 %). In service work, as in non-formal training and also in on-the-job learning, the older employees had participated more than the younger ones. In manual work, participation was very low (12.8 %), and again none of the older workers had participated during the previous 12 months.

Training provided by the employer. Employers had provided most of the formal (77 %) and non-formal (84 %) training (Table 18). In general, compared to younger workers, training was more often paid for older workers (p<.05), especially non-formal training (78.9 % vs. 94 %). Formal training was most often provided to manual workers (74 %), especially the older ones, which may at least partly explain their higher participation rates shown above. Non-formal training instead was most typically provided for employees in service work, again especially for older workers.

Comparison of the age – work type –groups showed some differences, although statistically significant (p<.05) only in regard to non-formal training (table 18). In manual work, employers had paid for all the formal training for older workers. Employers had provided training more often for younger workers also in service work (79.2 % of older workers vs. 68.2 % of younger employees). In office work, however, it was the opposite, so that training was more often provided for younger (65.5 %) than older (57.1 %) employees. In non-formal training, employers had provided almost all the training for older workers in service (94.4 %) and office work (92.9 %).

Length of participation. Length of participation varied depending on the form of training. In general, one to nine weeks was a typical length for formal (40.7 %) and non-formal (54.9 %) training, although 37 % of the non-formal training had lasted less than a week. On-the-job learning activities had most typically (38 %) lasted a maximum of one day (1-7 hours), although in office work 15-35 hours was the most typical length.

However, notable differences can be observed when the effects of age and work type are taken into account (Table 18). Firstly, formal training was longest among the younger manual workers (an average of 39.4 weeks). Secondly, compared to younger workers, participation of older workers had been of shorter duration (p<.01) in all types of work. Non-formal and on-the-job training had been longest in service work. Whilst in services, these non-credit courses had typically taken between 1-9 weeks, in office work they had been more evenly divided between those taking less than a week and those taking 1-9 weeks. Similarly the length of on-the job-training had a more uniform pattern in office work (mostly 1-7 hours), while in office work learning activities varied more by duration. On-the-job training was relatively rare in manual work, but it tended to be longer than in services and office work.

Consequences of participation in training. Most of those who had participated in training (62.8 %) reported some effects in the workplace. However, these effects depended strongly on age and work type. In addition, the higher the training background in the group in question (manual low - office work high), the fewer the consequences reported from training participation (control for training weakened this relationship notably, although it still remained statistically significant). Most training effects were reported by manual (76.6 %) and service (69.1 %) workers, in particular by the younger ones, while less than a half (46.3 %) of the office workers did so (χ^2p<.01). Of the latter, only a third of the older employees reported some kind of consequences from their training participation. Most typical training effects were new job tasks and increased professional responsibility.

Learning culture

The results showed that learning culture could be characterised in a fairly positive manner in the WORKTOW- companies (table

19). With regard to all issues except feedback, a majority of the employees in almost all age and work type groups agreed with the mostly positively formulated statements concerning the organisation's learning culture. Furthermore, when it comes to the learning of older workers, the situation in SMEs appeared to be fairly positive.

In general there were statistically significant differences only with regard to feedback (χ^2 between the three work types at p<.01) and the success of older workers in learning (χ^2 between the three work types at p<.05). In manual work more than 70 % of both the younger and older employees reported that they were given enough feedback in the company to perform their job adequately, while less than a half in service and office work did so. Compared to younger workers, older workers thought more often that their success in the learning they had undertaken was as good as that of younger workers (older workers around 80 % and younger around 70 %). Generally speaking, older workers tended to view the various aspects of learning culture more positively than younger workers. However, in manual work this was not the case with regard to encouragement to come up with nerw ideas

Learning organisation. Most typically (25.4 %) the respondents considered their company to be as much of a learning organisation as other companies in the field. About one fifth thought their company to be either more or less of a learning organisation. However, there were more than 30 % of those who could not express their opinion. There were statistically significant differences between the six groups (χ^2 p<.01) so that in manual work and in services the most typical response was

Table 19 Descriptions of the companies' learning culture by work type and age group (% 'agree' or 'strongly agree')

In this company...	Manual		Service		Office		χ^2 Sig[1]	All[2] (χ^2 Sig)	
	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs		- 45 yrs	45+ yrs
...employees are given enough feedback to perform their job adequately	70.0	73.3	45.9	46.7	47.7	51.3	n.s	52.0	52.5
...we are encouraged to asking questions	48.7	56.3	54.1	60.9	47.8	66.7	n.s	50.6	62.4
... we are encouraged to coming with new ideas about work	65.8	60.0	60.8	63.0	62.7	74.4	n.s	62.6	67.0
...the training of older workers is considered as important as the training of younger workers	67.6	93.8	79.7	68.1	83.3	68.4	n.s	78.5	72.3
....the success of older workers in learning undertaken is as good as that of younger workers	68.4	80.0	74.3	87.2	70.1	82.1	*	71.5	82.4(*)
...older workers have difficulties in learning new skills required in non-managerial 'obsA	61.6	68.8	60.8	70.5	72.7	84.6	n.s	65.3	75.8

*<05; 1 Between the six groups; 2 Between the age groups; *Scale* used: 1= Strongly disagree, 2 =Disagree, 3 =Agree, 4 = Strongly agree (A scale turned so that the percentages indicate disagreement or strong disagreement)

'cannot say' (around 50 % in manual work for both age groups), whereas in office work it was 'about the same'. However, we want to point out here that we did not define "a learning organisation" in the questionnaire so that we had no control over what organisational aspects the employees had in mind when rating their company.

An older worker? In general 41 % responded that no fixed age-limits could be given to indicate when a worker can be considered an "older worker". The percentages were highest in office (56 %) and service work (42 %). Thus, those who mentioned age-limits were often employees from the manual sector and they most typically referred to 50, 55 or 60 years of age. No statistically significant age-differences were found. Amongst all the employees, 23 % could not express their opinion with regard to this.

Self-directed learning

On the basis of the results, the employees can be characterised as relatively self-directed in their learning and job-related problem solving (Table 20). Of all the employees, a total of 70 % responded that they prefered to find solutions themselves rather than asking others first. Rather than overall age differences, we found statistically significant differences across the work types among the younger workers (χ^2 p<.01), especially between manual and service work. In the latter sector, the preference for finding solutions oneself was lower (56.6 %), while in the former it was higher (87.7 %) than in any other groups.

Most of the employees (74 %) often took initiatives to update their job competence. Whilst taking the initiative was as common among the older and younger workers in service work (78.9 %), it was reported less often among older workers in manual (50 %) and office (65 %) work.

Ways to update one's competence. Those who said they took initiatives to update their competence did it most typically by asking col-

Table 20 Descriptions of the companies' learning culture by work type and age group (% 'often' or 'very often')

	Manual		Service		Office		χ^2 Sig[1]	All (χ^2 Sig)	
	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs	- 45 yrs	45+ yrs		- 45 yrs	45+ yrs
Prefer to find solutions by oneself rather than asking others first	87.7	76.5	56.6	72.5	78.6	72.5	**	68.3	73.0
Take initiative in updating one's job competence	72.1	50.0	78.9	78.9	70.0	65.0	n.s.	75.1	70.9
Ways to update…									
…ask colleagues	77.5	46.2	81.5	82.5	75.0	64.1	*	78.8	72.2
…ask superiors	48.7	35.7	72.4	59.7	47.2	28.2	***	60.9	46.1(**)
…talk with experts in the field	35.1	53.8	50.4	48.3	52.1	63.2	*	48.5	54.1
…use the Internet	8.3	0.0	8.9	19.1	31.0	7.9	***	15.7	12.8
…read manuals and information from suppliers	52.8	46.2	60.8	55.6	73.6	80.0	*	63.5	62.9
…read professional journals	24.3	30.8	42.3	48.3	64.8	79.5	***	46.3	57.1
…attend courses and education/training programs on one's own initiative	2.8	8.3	33.6	32.6	32.8	23.2	**	25.4	30.3
…other ways	0.0	0.0	50.0	62.5	80.0	80.0	n.s.	63.9	36.1

[1] χ^2*<.05, **<.01, ***<.001; *Scale used:* 1=Never, 2 =Rarely, 3 =Often, 4 = Very often

leagues, by reading manuals and information from suppliers and by reading professional journals. There were however statistically significant differences between the age and work groups with regard to most ways of updating, as is shown in Table 20. In *manual work* younger employees mainly relied on collegial help (77.5 %), while for older workers the most typical method was to talk with experts (53.8 %). In *service work* collegial support was preferred above other forms in both age groups, but additionally, the younger employees particularly also often asked for help from superiors (72.4 %). In *office work* collegiality was more important to younger than older employees in this respect. The latter preferred reading and some other ways (not mentioned in the questionnaire) when updating competence. Attending training on one's own initiative and using the Internet were the least used means, in particular in manual work. Not unexpectedly, using the Internet was more typical of younger workers, although in services, older employees used it for competence updating more than twice as often as younger employees.

Summary and conclusions

Altogether 27 SMEs involving 37 employers/managers and 378 employees from three countries participated in the WORKTOW survey. Most of the companies represented the service sector. A quarter of the companies had a maximum of 30 employees, another quarter between 31 and 50 employees, and three had more than 200 employees. Two thirds of the employees were below 45 years of age. More than a half of them (54 %) were service workers, a third (30 %) office workers and 16 % were from the manual sector.

In the survey we requested information from managers about the organisational context of SMEs for learning. The results showed that major changes had been made in almost all companies, most commonly in the industrial sector. (eg. development of quality systems). These changes were reported to have an impact on older workers only in the industrial sector but not in services and office work.

There were also considerable differences between companies in HRD and training. This area was best developed in service sector SMEs. Training was most typically carried out as on-the-job training, trainers being company staff. Management rated an employee as an older worker at an average age of 50 years. A majority of the managers, especially in services, did not consider there were age-limits to defining a worker as being too old to learn new skills in a non-managerial job.

From employees, subjective assessments of the characteristics of the SMEs as learning environments were requested. These results showed that SMEs as workplaces offered an environmental framework for learning at work. The work situation was often reported to be hectic, but feelings of stress were rare. Differences were found between sectors but not between age groups. Work type but not age also contributed to most differences found in the control of work by deadlines (manual and office), customers, management and repetitive tasks and routines (service). Generally speaking, older workers reported less control to their work by various factors, the differences being the greatest within manual work. Work provided learning opportunities to some extent. Again there were no direct age effects but rather, effects by work type and joint effects of age and work type. The opportunities were rated the best in office work. Differences found in learning opportunities were greater among the older than the younger workers across sectors, in particular in computer use.

Possibilities of using or developing job competence were rated strong or very strong, with the exception of the overall possibilities of participating in education and training. Older workers tended to view their possibilities as somewhat better, especially in the manual sector. In manual work especially, older workers saw the possibilities of developing professional skills in the areas they wished to be much better than those for younger workers, whereas with regard to the possibilities of obtaining necessary training, the opposite situation prevailed.

A majority of the employees (78 %) had undertaken some form of training during the last three years, mostly on-the-job (46 %) and formal training (45 %).The employers provided older workers with more training, but they participated less than younger colleagues, especially in formal training. In addition, the training they undertook tended to be shorter in duration than among younger workers. In formal training participation there were differences across sectors but only among younger workers. In the manual sector, employees had participated almost only in formal training. In the service sector, it was the older workers more than younger ones who had participated in non-formal and informal training.

Most of those who had participated in training reported some effects in the workplace, although this was dependent on age and work type. The higher the training background of an employee, the fewer the consequences reported. Manual and service sector employees, especially the younger ones, reported the most training effects (about 70 %), and older office workers - the least (about 30 %).

The notion of a learning culture was characterised in a fairly positive manner in SMEs, and noticeably, among older workers. The only exception was in obtaining feedback, although manual sector employees tended to be satisfied with that also.

That learning and problem solving which took place in SMEs was relatively strongly self-directed. No age-differences, but rather, cross-sectoral differences between manual and service work were found. Service sector workers preferred the least to find solutions themselves, but tended to ask for help from colleagues (especially the younger workers), whereas manual sector employees were most self-reliant in this respect. Most of the employees often took initiatives to update their job competence, albeit older workers less so in manual and office work. In general, the most common ways to update one's competence was asking colleagues, reading manuals and information from suppliers, as well as reading professional journals.

A conclusion that can be made on the basis of these results is that age differences in how employees view SMEs as learning environments are relatively small, and in many respects non existent. Instead, cross -sectorial differences were often significant. The only exception to some extent was participation in formal training. Further, strong joint age-sector effects were found in many cases, showing differences only between one age group but not in the other, or only in some cases. This suggests that, when aiming to advance opportunities for learning and developing an environment for learning in the workplace, the starting point should preferably be the specific attributes of the particular job sector and occupational branch in question. In addition, the local circumstances, rather than the age of the potential participants (employees) in the SMEs should be taken into account.

Another conclusion is that more attention should be paid to the outcomes of training. Highly experienced workers especially and those with higher education should both find participation in training rewarding and meaningful in the workplace context. This is likely to set a challenge to training providers as well as to managers and employers in SMEs.

57

IV Case studies on learning interventions

WORKTOW interventions focused on mapping the learning environment in general, including the opportunities for participation in learning situations, attitudes towards older workers, perceived competence and the investigation of individual learning styles and preferences for learning. The rationale, the methods used and the subjects involved in the various project sites varied, whilst the goal was shared ie to improve opportunities for learning among older workers. Some partners chose to focus solely on older workers, whilst others adopted an integrative approach involving all workers. These approaches resulted in five different learning interventions but each was designed to realise the common goal:

- ☐ *Learning Interventions as Individual Reflection on Learning Styles* (Keele)
- ☐ *Learning Interventions Based on Employee Development Schemes* (EDS) (Lancaster)
- ☐ *Learning Interventions as Action Research with a Broad Developmental Assessment* (Jyväskylä)
- ☐ *Learning Interventions as Evaluation and Data Feedback of Dialogic Practices and Career Development* (NOVA)
- ☐ *Learning Interventions as Participatory Analysis of Learning Practices and Career Patterns* (WRI)

The differences in the approaches partners adopted were partly due to the different contexts for working life across the WORKTOW countries as well as to differences in professional interests amongst the research groups. Originally a company was agreed as a unit of study, but eventually, the different approaches focused on different levels. Only one intervention, the learning-style study at Keele, had an exclusively individual level approach In the NOVA intervention, focusing the study on the individual level of learning processes was not allowed in project companies. All partners actually did collect individual data, but the interventions were, for most partners, based on group activities, for example workshops, where aggregated individual data from the fieldwork was fed back to the organisation for discussion. Mapping individual learning needs among employees by use of the EDS in Lancaster could also be seen as operating at the individual level, but the feedback process took place at organisational level.

The partners agreed on three criteria for selecting the companies for the interventions.

- Firstly, the companies were to be small or medium sized, later adjusted to be consistent with the national criteria for SMEs.
- Secondly, they were to cover three work types: manual, communication (service), and information (office) work.
- Thirdly, they were to have older workers, defined as employees aged 45 years and above, among their staff.

The main methodology involved both quantitative and qualitative methods for data collection. The overall learning environment, as described through a survey conducted in the 27 WORKTOW companies selected, was described in part three (III) of this report for each three work types, separately to older and younger workers. Various forms of dialogue were crucially important in all the interventions made. Emphasis varied from a basic instrument to investigate and enhance the understanding of one's own personal learning style, via understanding differences in perceptions and attitudes, communicating learning and development needs among staff, to analysing interconnections between careers and learning and the development of organisations.

Learning interventions as individual reflection on learning styles

Alexandra Withnall, Keele University

Rationale

In presenting the rationale for this study the following points seem important:

- There is a gap in our knowledge about adult learning styles in general and those of older people in particular. The gender dimension is also often neglected.
- Empirical research on learning styles has been carried out extensively in the USA but largely with children and younger people.
- Differences in learning styles are rarely taken into account when instructional methods are considered.

In the literature on learning styles models the work of Kolb (1976) and Honey & Mumford (1986; 1992) were those most frequently used in a practical context in the workplace in the UK. Honey and Mumford suggest that most adults use a blend of four learning styles, which shape an individual approach to learning (activists, reflectors, theorists and pragmatists). This model was rejected in favour of one based on instructional preference, which mainly attempts to measure the individual's preference for environmental conditions in a learning situation rather than the psychological processes involved.

Method

An extension of a learning style inventory by Rundle & Dunn (1999), *Building Excellence (BE): the Learning Individual Programme*, was utilised. This Learning Style Inventory (LSI) specifically designed for use with adults is a 118-item self-completion instrument, which measures preference factors reflecting key variables:

- Perceptual elements
- Psychological elements
- Environmental elements
- Physiological factors
- Emotional factors
- Sociological elements (including preferred leadership style and group interaction processes)

Information derived from the *Building Excellence* Inventory is most important when an individual is developing new skills, mastering new information or solving complex problems. It is less important when an individual is engaged in a familiar routine work.

In addition a booklet was devised for individual use consisting of material and exercises on individual skills, learning from experience, good and bad learning experiences and ideas for a personal learning plan. ("This is Your Life"). These were originally to be used within a workshop environment (see below).

In addition to the data obtained through the workshops and the completed booklets, pilot interviews were conducted in two companies (6 women between 40 and 61 years). The WORKTOW-questionnaires were administered in five companies.

Recruitment

Selection of research sites was carried out in accordance with the criteria laid down in the original WORKTOW proposal. In view of on-going changes in the nature of the labour market, it was decided to focus particularly on what is sometimes considered to be 'women's work'. This suggested some areas where women would be concentrated ie caring, tourism and leisure and training and development.

Methods for recruiting companies who might wish to participate included:

59

- Mail shots
- A press release
- Contact with different Chambers of Commerce and employers' organisations
- Personal contact by telephone and letter

Recruitment was found somewhat difficult in that it often depended on the goodwill and availability of a particular individual. Shift working, especially among nursing home staff, also meant that the timing of the interventions had to be carefully planned.

Implementation of the LI

The BE Adult Learning Style Inventory was delivered in a workshop environment in three of the participating organisations - two nursing homes and a training agency. During the workshops, efforts were made to provide a comfortable and non-threatening situation for the participants.

Employees from a pottery retail outlet and a hotel completed the inventory in their own time and posted it to the researchers. A total of 10 women participated in the three workshops and a further 16 completed the BE Learning Style Inventory.

Results from the Keele-study

1. Dimensions on the Learning Style Inventory

- *Perception.* "Tactile" (external kinaesthetic) was the most preferred means of learning new information whereas emotional involvement was the least preferred.
- *Psychological elements.* Most of the responses were neutral, then a preference for a systematic approach in contrast to a global approach whereas there was roughly the same score for reflective decision making compared with an impulsive approach.
- *Environmental elements* favouring learning for these respondents were well-lit, warm, informal and quiet environments.
- *Physiological elements.* No strong preferences in relation to eating or moving around in learning situations showed up in the material. Preferred time for learning was late morning and early afternoon.
- Emotional elements. Slightly more favouring internal above external motivation, but many expressed no preference. A distinct preference for non-conformity, but quite a few preferred more structure.
- *Sociological elements.* A preference for less authority, less variety and smaller work groups.

2. Booklet answers

The booklets were completed in workshops or individually. The following is a categorisation of good and bad learning experiences.

Good learning experiences may stem from:

- A degree of learner control over the learning environment
- The opportunity to participate in a non-competitive environment
- An informal setting
- A prior degree of interest in the topic or material
- A comfortable atmosphere
- A calm teacher/lecturer who is patient, well-informed with a sympathetic approach

Conversely, bad learning experiences tended to be largely the result of what were perceived as poor teaching or instructional methods:

- Teachers who lacked imagination, were boring or presented material poorly
- Teachers with an unsympathetic or intimidating attitude
- A competitive learning environment

3. Follow-up interviews

For the final stage of the project, it was planned to carry out in-depth semi-structured interviews with at least a 50 % sample of the 26 women who completed the LSI and/or took part in the workshops. Unfortunately, there were no volunteers for the proposed interviews, so this part of the intervention was therefore abandoned.

4. Evaluation of the intervention

To evaluate the impact of the "This is Your Life" pack and the individual feedback provided on the LSI, a confidential questionnaire

was mailed to 25 participants. The themes were related to recent learning events and personal learning plans, feedback on the LSI, relevance and usefulness of the pack.
Only 2 responses were received, and a brief follow-up questionnaire was despatched to the 24 non-respondents to try to uncover the possible reasons for this non-response. 6 responses were received indicating that they did not find the project interesting, relevant or enjoyable. These responses are obviously much too small in number to draw on any definite conclusions. However, coupled with the overall lack of response to the request for interviewees, it seems that the women who had participated were either too busy to respond and/or did not find the idea of understanding their personal learning styles or indeed anything connected with learning as relevant in their present environments.

Discussion of the Keele study

In relation to the aims of the Keele intervention, the following comments can be made.

General observations

The decision to focus mainly on "women's work" meant that many of the participants were employed in low skilled jobs, often involving part-time or shift-working arrangements. The fact that **time** was cited as a factor for non-response to our questionnaires – and may also account for the general disinterest in further participation in the project – suggests that, for many older women, work is firmly intertwined with issues of family and other relationships which imply demands and responsibilities that have to be constantly juggled with work commitments.

Evidence that learning was not a priority for these participants has already been seen in the earlier fieldwork when a general lack of training opportunities accompanied by a lack of concern about this situation among both employers and employees was found. In addition, problems experienced with securing and maintaining the participation of SMEs in the project and furthermore, in arranging the workshops and interviews, suggests that neither employers nor employees saw any immediate relevance in furthering their knowledge about learning and about how training might best be delivered in the workplace. **Neither participants nor their employers seemed aware of any need to change**, let alone sure of how to progress. There was little recognition of age diversity in the work place.

Accordingly, little importance was attached to obtaining knowledge of employees' learning styles or indeed, to providing any planned and structured training opportunities for them as part of company policy. In general, there appeared to be reliance by both employers and employees on pre-existing skills or on skills developed outside the work place. These might have been gained in a domestic situation, in the course of previous employment or through self-initiated training and learning experiences. The only exception was in those work places, such as the nursing homes, that are subject to statutory regulation and thus to periodic inspection by social service Departments and where nursing and care staff are required to undergo certain training associated with, for example, safe procedures for lifting of residents.

Specific observations

The BE Learning Style Inventory. It is often assumed that all older workers learn in a particular way that is somehow different from younger people. However, learning styles at any age are necessarily individualistic although some connections between learners can be made. The patterns revealed were specific to this group of respondents. However, it was the case that the BE Learning Style Inventory **in this form** proved too complex to use with women who were mainly in low status jobs and for whom the idea of learning was alien.

In theory, a simpler user-friendlier instrument could offer better insights into how an understanding of employees' learning styles could benefit both individual learners (of any age) and influence HRD policies and training practices in a range of different SMEs. Riding and Rayner (1998) demonstrate how individuals develop a variety of learning strategies for dealing with the learning tasks especially those that they perceive to be incompatible with their preferred learning style. They suggest that a specific scheme of work aimed at the teaching of learning strategies could form part of a workplace-training programme as a way of underpinning workplace development and contributing to the processes of lifelong learning.

In a broader context, it is apparent that use of a learning style inventory casts the educator/trainer/HRD specialist in the role of psychodiagnostician and facilitator of other people's learning. However this diagnostic approach should include the broader social and cultural context in order to understand the work roles of older women workers that are intrinsically bound up with their roles and responsibilities in non-work contexts.

The exercises in the pack (**This is Your Life**) did indicate some of the individual and environmental constraints that may inhibit older employees from learning, many of which appeared to be the result of poor teaching and learning management in the compulsory phase of education. However, it appears that most of these participants were in the "precontemplation" stage with regards to learning. This is described as the "stage in which people are unaware of having problems or for other reasons are not thinking seriously about changing" (Prochaska and DiClemente, 1994, p.24). Research into behaviour change would suggest that, if action is forced at this very stage, dropout rates are often over 50 %. Studies have revealed that those in the contemplation stage of change are most open to both feedback (information based on the personal experiences of the individual) and education (information regarding external events) – a process of change that Prochaska and DiClemente term "consciousness raising". If participants had been at the stage of contemplation, some of the workshop pack would have been highly appropriate, being designed to encourage discussion of problems, and providing useful information to help resolve some of the issues that it was expected would be raised.

Completion of the LSI and use of the pack at this stage did, however, reveal some more positive pointers for teaching and training delivery that could be used to empower older (female) employees as learners in future and to inform their work practices. Participants were provided with information about their personal learning preferences; they were made aware of the life course factors, which had influenced their attitudes to learning and analysed what, for them, constituted a good (or bad) learning experience. They were therefore armed with some sources of individual **guidance** about the kinds of learning environments in which they are most likely to flourish. This kind of self -awareness can also be empowering as a first step to increasing effectiveness at work through a recognition of their own strengths, an understanding that others may learn in other ways and may have complementary strengths and for working in a more collaborative mode – especially important for those women working in care settings – and for non-work contexts. The women who participated can therefore refer back to their packs in future if they are required to undergo training or are employed in any other work contexts. However, this aspect of the intervention does not lend itself to immediate evaluation of its effectiveness; any impact will be long-term and may not be apparent for some time.

It is clear that ideas about the importance of older workers in the labour market and their training needs are not yet at as advanced a stage in the UK as in some other European countries, notably in Scandinavia. Through the intervention, managers' attention was drawn to impending changes in UK government policy in respect of lifelong learning and the necessity to focus more immediately on issues concerned with the development of older employees' knowledge and skills as part of any HRM change (Current relevant developments in the UK have been discussed earlier in this report, pp. 5, 17, 23). In this sense, the intervention may have a further long-term outcome not susceptible to evaluation at this stage.

Conclusions

The Keele intervention was originally based within six SMEs. Because of the general lack of interest in the training of older workers in the sectors investigated and the difficulties encountered in recruitment, the focus of the intervention changed to **individual** level.The intervention showed that, in **some** sectors, mainly those involving low skilled workers in low status jobs – and these are usually women – there is still a long way to go in encouraging employers and older workers themselves to recognise and acknowledge their importance in the workplace and to accept the need to ensure that they have access to learning and training opportunities. However, with the increasing emphasis on lifelong learning at European level and the recent discovery of the potential value of older workers in the UK, this may gradually change.An understanding of learning styles will then assume a new relevance. In this sense, the intervention was innovative in that it introduced a new and more focused method of analysing individual learning style preferences to Europe. It also showed the value of developing a biographical approach to understanding older workers' attitudes towards undertaking learning and their pedagogical preferences. Such methods have considerable implications for human resource development practice and ultimately for the promotion of lifelong learning across Europe.

Learning interventions based on Employee Development Schemes (EDS)

Peter Ward, Lancaster University

Rationale

The Employee Development (ED) Schemes were introduced in the UK in 1989 with a broad and optimistic educational philosophy underlying: learning is viewed to be desirable for all employees of a company. Studies (Beattie, 1997; Firth & Coffey, 1997) on effects of ED schemes have shown a range of benefits for companies as a result of introducing these schemes. In the Lancaster area, a consortium, the Lancaster Employee Development Consortium, was established in 1997 by the two partner institutions – the Department of Continuing Education at Lancaster University and the Adult College at Lancaster – with grant support from the Department for Education and Employment. (This has now been renamed the Department for Education and Skills).

The main aim of the Consortium was to set up ED schemes in companies in the local area, with the following objectives:

- to increase learning opportunities available to employees of local companies
- to increase participation in learning activities by employees of local companies, particularly "non-traditional learners" (adults who are under-represented in education and training)
- to help local companies work towards National Training and Education Targets, and thereby increase local and national competitiveness.

There is a broad and optimistic educational philosophy underlying the ED schemes in the UK according to which learning (vocational or non-vocational) is seen to be desirable for all employees of a company. Increased participation in education, training and learning opportunities may, it is claimed, eventually and directly or indirectly benefit a company's skill levels and competitiveness.

Method

A significant feature of ED schemes is the partnership between employer and employee - both parties benefit and both parties contribute in kind. The employer may develop a scheme that offers and provides:

- An annual financial entitlement to employees to encourage participation in a learning programme
- Courses (of a non-work or work-related nature) on work premises
- Time off work for course attendance
- Impartial guidance (through an educational guidance counsellor) about learning and career opportunities

The employee for her/his part invests her/his own time in the learning programme, may make a financial contribution (perhaps partial towards the full cost of a course), and can be expected, in return, to offer the employer a sense of commitment and loyalty. In this way, the scheme can be seen as mutually beneficial.

ED schemes can encourage participation in learning activities by 'non-traditional learners' (including working class adults, middle-aged males, adults who left school at the earliest opportunity without formal qualifications) who are under-represented in other forms of education and training. By encouraging and supporting employees to return to a formal learning situation, barriers to participation can be overcome and progression promoted. Whatever the learning activity (work or non-work related) employees can be re-introduced to the requirements, discipline and rewards of a structured learning experience.

Company recruitment

Contact with a sample of SMEs (by size and sector) was attempted through a mailing to

64

500 organisations in the region (north-west England). Possible SMEs were identified via:

- consultations with local organisations such as the Chamber of Commerce
- an economic development unit
- the Training and Enterprise Council
- direct contact (usually by telephone to a named contact) with SMEs in the light of advice offered by the organisations above, information gained from company directories, and from local knowledge and contacts.

Initially the WORKTOW Project was to be concerned with SMEs with up to 200 employees. Subsequently, this was raised to 500 when project partners experienced difficulty and delay in recruiting SMEs.

Essentially, the Lancaster intervention comprised three phases once contact was established with an SME and senior managers decided to support the project:

- phase one: training needs analysis involving one-to-one meetings with all or a sample of employees,
- phase two: establishment and development of an ED scheme, including the delivery of education/training opportunities,
- phase three: evaluation of intervention from the perspective of employees (by a further round of one-to-one meetings), managers, and the organisation as a whole.

This intervention 'package' would, therefore, require senior managers to make a significant commitment to the project in terms of employee-time and cost, especially for time away from work to take part in the one-to-one meeting(s). In addition, it would be necessary to consider the cost of providing courses for training needs identified in the meetings and the cost of providing an annual education/training allowance for each employee to use as they wish.

In the mailing, and particularly in direct contact with senior managers by telephone, it proved a challenge to describe succinctly the purpose of the project and the commitment and support required of SMEs/managers.

Results from the Lancaster-study

Four of the six organisations in the Lancaster sample introduced ED schemes, and all schemes have made a positive impact on both employees and the organisation. Older workers have benefited in terms of:

- help to identify and clarify education and training needs
- provision of career and educational guidance
- take-up of cash allowance for education/training provision of their own choice
- growth in confidence/personal development
- increased participation in, and commitment to lifelong learning
- enhanced commitment to the organisation
- introduction to information technology (IT) and commitment to, and confidence in its use

In the two non-ED scheme organisations, HRD policies and provision are well established, and older workers are benefiting from the relaunch of the open learning centre and IT-training in one company and from the wide ranging provision in the other.

It was evident from the one-to one meetings with a total of 75 employees aged 45 years and above, that older workers generally bring a range of knowledge, skills, experience and positive attitudes to their work. Age was not seen as an issue with regard to the type of work or to the organisation. Indeed many interviewees emphasised the value of experience both for their work and for the organisation. From statements made during the course of the project, it was apparent that managers recognise the valuable contribution older workers make to the organisation.

Most older workers adopt a flexible approach to their work and are adjusting to, and coping with the gathering pace of change and the need for new learning within the workplace. This has been brought about by eg the introduction of new machinery, methods and systems; increasing workloads; and the impact of change as a result of new legislation and new theory and practice. Overall, the majority felt they could contribute more to the organisation based on their knowledge and skills, though there were no specific cases where older workers felt they were marginalised or excluded due to their age.

Many older workers are interested in the possibility of promotion and/or other jobs. No major concerns about job hopes and plans were expressed though there was general concern about work pressures, constant change, and possible job loss. With regard to retirement, approximately equal numbers in the sample were interested in early retirement or in working to the official retirement age. The finding that half the sample is interested in early retirement, if possible and financially viable illustrates the extent to which this expectation is now firmly established in the workplace.

Of the older workers gave the impression of commitment to and interest in their work and the organisation. With regard to making a stronger contribution, the issue for many older workers is not a lack of learning opportunities, nor feelings of being undervalued and/or excluded. Most concern is due to the quantity and pressure of work, the lack of time to work effectively, and the constant change imposed both internally and externally. It is apparent that there are barriers to participation in education and training, largely relating to the lack of time and pressure of work, including shift and overtime working, and changing patterns of work. Employees cited examples of middle managers obstructing participation in training sessions because of the pressure of work.

Almost all the older workers had taken part in formal education/training in the year prior to the meeting, largely in courses provided by employers or by using the education allowance in the ED schemes. All employers made 'mandatory' provision e.g. health and safety, basic food hygiene, thereby reflecting the growth of mandatory/formalised training required by UK government legislation, as well as training (e.g. Care courses in those organisations caring for people with learning disabilities) required by funding agencies (e.g. local government). In addition there was a considerable amount of IT training, usually at basic/intermediate level, reflecting the widespread introduction of IT in the workplace. Work-related and personal development benefits were reported from participation in all types of formal provision.

In addition to formal provision, older workers took part in a range of non-formal and informal learning activities in order to keep abreast of new developments both internal and external to their organisation. These learning activities included attendance at seminars and meetings, reading (often in out-of-work hours) of work-related books and journals, and use of the Internet. Other examples included learning from suppliers' staff about the operation of new machinery during on site installation.

Where ED schemes have been introduced and an annual allowance (e.g. £30 or £50) made available for staff (of all ages) who wish to take education/training courses of their own choice, there is evidence of involvement by older workers leading to enhanced commitment both to the organisation and to lifelong learning. Some older workers used the allowance for introductory IT courses, thereby ensuring both personal and work-related development.

ED schemes also provided a range of basic courses (e.g. English/communication skills, mathematics, IT) and these have attracted a range of employees including older workers and 'non-traditional learners'. Again there is evidence of personal and work-related development.

Evaluation of the research intervention

In order to complete the project activity within the organisations a questionnaire was sent to a senior manager contact in five organisations. The intention was to discover whether the project research and reports informed the view managers have of older workers and whether they influenced recruitment, and training and development policies and practices. In addition managers were invited to comment on the value of the reports with regard to the provision of information and views from the sample of employees on the day-to-day running of the organisation.

Older workers are viewed 'very positively', as 'a valuable part of the workforce who apply their experience/maturity to their job in a way which benefits the company'. Age is not regarded as an issue or a problem although in one company, older workers 'tend to go off sick more'. For one manager, older workers 'often bring a period of longer-term reliability with them because their lifestyle is more settled'.

Given the positive view managers had of older workers, the research findings generally confirmed existing views. As a result of the research, one manager now sees older workers 'as a more valuable asset … (I am) more aware of the potential value of older workers'.

Recruitment, and training and development policies and practices were reinforced by the findings and remain relatively unchanged. With regard to training and development, one organisation will 'fine tune' some of their approaches in the light of the findings, particularly where there 'have been some misunderstandings'.

The findings covered the views of interviewees on additional topics requested by managers, and on the day-to-day running of the organisation. In one organisation the findings were put to the management team for consideration, and in another 'we have certainly considered the issues raised and this has helped us to determine which areas to focus on i.e. staff appraisal, communication, consultation'.

Discussion and conclusions

The findings of the Lancaster intervention relate to the WORKTOW-objectives as follows:

Objective 1… Older workers bring a range of knowledge, skills, experience and positive attitudes to the workplace, and many consider they could contribute more to the organisation.

Objective 2… Learning by older workers in the workplace was undertaken through formal and mandatory provision of courses, and by non-formal and informal learning activities.

Objective 3… Lifelong learning opportunities for older workers have been facilitated in the four organisations in which ED schemes had been established (and in the two non-ED scheme organisations, where HRD policies and provision are well-established), and the schemes strengthened the contribution of older workers to the organisation.

Objective 4… Managers regarded the diversity of the workforce as a positive feature of organisations, especially for those in the Care field.

Objective 5… ED schemes place emphasis upon personal development as well as the development of vocational and non-vocational skills, often with emphasis upon the needs of 'non-traditional learners', and therefore contribute to the flexibility and productivity of workers of all ages, to social cohesion, and to the improved functioning of the labour market generally.

The Lancaster-study has been able to identify innovative ways of making older workers participate in learning activities. ED schemes are a means by which:

- SMEs can invest in all their employees including older workers and non-traditional learners, and thereby make gains in terms of commitment to the organisation and greater efficiency and productivity.
- older workers can be encouraged to participate in learning activities, with ED schemes overcoming barriers to participation, re-engaging individuals in the process of formal learning, and providing a boost to confidence and personal development.
- the knowledge, skills, experience and attitudes of older workers can be recognised, valued, utilised and strengthened.
- SMEs can develop a learning culture.
- SMEs can carry out skills audits/training needs identification across the organisation.

Learning interventions as action research with a broad developmental assessment

Tarja Tikkanen, University of Jyväskylä, Norwegian Institute of Adult Education (NVI) (VOX commencing 1.1.2001)

Rationale

In Jyväskylä we did not select older workers or their career development in the companies as specific targets for LIs. Rather, our approach can be defined an integrated one. We wanted to emphasise two particular aspects of the conceptualisation and practice of adult education and training (AET) within the framework of lifelong learning. Firstly, participation is not usually limited by the age of the participants, neither conceptually, nor in providers' practices. In spite of the lack of these explicit age-limits in the latter, however, it is often the case that various 'age-

Table 21 Summary of the main characteristics of the WORKTOW Learning Intervention planned in Jyväskylä

Learning focus	Central contents	Levels covered	Goals
Concepts	Knowing, knowledge Learning Job competence Learning organisation	Individual Organisational	Broader views of knowledge, learning and competence A concept of a learning organisation
Attitudes	Towards learning Towards ageing Learning climate & culture	Individual (employees) Organisational (management/ supervisors)	Individual and organisational introspection into attitudes their nature and effects
Practice	Informal learning models and approaches (new and old) Training models and approaches (traditional vs. "modern")	Individual Organisational Formal training	Monitoring, identifying and utilising the existing competence in company in a better way Examining/finding effective ways to arrange in-company learning, by e.g. - recognising the most competent mentors or learning facilitators (internal "teachers") - examining how senior-junior compositions could be deliberately used for effective learning - examining how management could better support in-company learning - mapping the various obstacles (structural, attitudinal, or competence-related, etc) for more effective learning - improving in-company transfer of learning and competence
Provision & SME support	Options available Company-based focus Support for learning & development in SMEs	Individual Organisational Local	Local knowledge Networking Sustainable practice (development) and cooperation

segregating' practices easily develop among participants. Secondly, in the theory and practice of AET, experienced workers are in many ways viewed as learning resources for other, less experienced workers, and thus, also as a competence resource for companies.

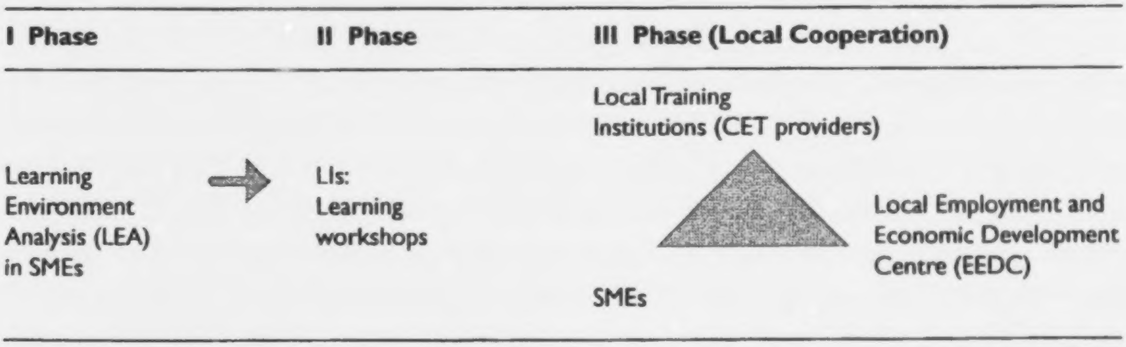
Table 21 summarises the main characteristics of the WORKTOW Learning Intervention in Jyväskylä. We defined four focus areas to examine learning and training in companies and to target interventions. Firstly, with *central concepts* we wanted to focus on the understanding and meaning of 'knowing' and 'knowledge' as well as of 'learning', 'competence' and learning organisation in the SMEs, among management and employees of various age. Secondly, we studied *stereotypic thinking* of the age-learning and age-competence relationships by focusing on attitudes. Thirdly, with the focus on *practice of learning* our idea was to compare the "old" and "new" approaches to learning and learning methods applied in work-based informal and formal education and training. The fourth focus was on examining awareness of SMEs within the *local education and training market.* The intention was to expand the learning focus from solely within the companies to encompass local circumstances. All of these four focus areas were covered equally in all companies.

In addition to enhancing and stimulating thinking on lifelong learning in work settings, our main idea was to develop a model for learning interventions in and for SMEs, based on local network cooperation. The typical approach to training and interventions in companies is a reactive (need-driven), highly targeted and tailored, consultation-oriented intervention models and training approach, based on organisational problem definition and problem solving. However, in Jyväskylä we aimed at a broader and more proactive model. A proactive model would enhance and stimulate organisational and individual learning and development more generally, and would recognise both the need for and the actual reality of continuous learning. It would also be based on reciprocal and interactive initiatives, stimulus, and support for learning, between the actors in the companies on one the hand and between the companies and other relevant actors locally on the other. With the latter approach, the purpose was to bridge local practice, and thus to build sustainable and developmental networking locally.

Design and method

Figure 3 shows the overall design of the intervention in Jyväskylä. It consisted of three phases: Learning Environment Analysis (LEA) based on questionnaires, interviews, learning workshops and a local networking seminar. Additionally, LI and project evaluation was carried out at the end of the project.

Figure 3 Learning interventions developed in University of Jyväskylä


I Phase
II Phase
III Phase (Local Cooperation)
Learning Environment Analysis (LEA) in SMEs
LIs: Learning workshops
Local Training Institutions (CET providers)
Local Employment and Economic Development Centre (EEDC)
SMEs

LEAs (Phase I)

In LEAs we took the WORKTOW joint questionnaires for managers and employees as a starting point. We also planned a guide for interviews to approach issues that were rather too complex to be examined through questionnaires. In spite of these plans, documentary data was not collected. Besides CVs on project experience kept in one engineering company, issues related to learning and competence were not recorded and documented in these SMEs.

The local issues added to the joint WORKTOW approach were:

- Learning at work - learning skills, motivation, ability & practice in sharing one's learning
- Stronger focus on learning culture in SMEs
- Job competence – definition & needs, recognition and maintenance, sources, use and potential reserves
- Information technology –use, effects (on job, work environment & workplace climate), problems (a sub-project reported separately[4])
- Experience, age and professional competence – experiences with and without learning potential
- Attitudes toward learning and ageing
- Flexibility in working life – flexibility requirements, rate of flexibility
- Views on future – future of a company, of the staff & of the staff aged 45+.

LEAs were conducted during the spring of 1999 in all companies. The LEA results were analysed and reported back to the companies as brief company-wise summaries between late spring and early autumn the same year. In addition to company reports, a joint comparative summary report was written following a request from the managers in some SMEs.

Learning workshops (Phase II)

Based on the results from the LEAs, learning workshops were designed. The feedback from the researchers was presented and discussed in small-group sessions with employers and/or employees. In practice, phases I and II overlapped somewhat because, in some cases, the group interview sessions of phase one turned into lively discussions on learning and competence in the SME in question.
In these "learning workshops", however, no researcher feedback element was present. Learning workshops took place between spring and autumn 1999.

Local Networking Seminar (Phase III)

The main goal and target for the local network seminar was to support learning and development in SMEs, while the aim was to bridge local practice and to provide conditions for more sustainable development in these companies. A local network seminar was a compromise we were forced to make in relation to our original idea of building a three-pillar - SMEs, CET providers, EEDC (see figure 3, p. 65) local cooperation network. This was because the governmental agency, EEDC, refused cooperation with the project in the beginning. Their argument for not joining in was that there was no need for this kind of cooperation beyond the work they already did. However, this agency became willing and did join in towards the end of the project when requested again later.

Before the actual seminar, likely need for, and interest in participation were requested from both SME managers/owners and the representatives of local training institutions and the EED Centre. All these parties thought such a seminar was a good idea. However, finding time for participation was reported as a problem among employers/managers. Eventually only 43 % (3/7) of the employers/managers were able to participate in the seminar, together with five (5) representatives from the local CET providers, one representative from the EED Centre, one Project Manager from a relevant European Social Fund SME development project, and the local research group.

---

[4] For a list of publications see endnote 1 of this partner chapter.

71

Table 22 Summary of the characteristics of the companies involved in Jyväskylä

Branch/ Company	Type of work	Size[1]	Autonomy	Natural Learning Interventions
Production/ Nursery	Manual	34 (-60)	Independent	IT into communication and production systems. Formal training in IT use & in better client service.
Bank	Service	30	Independent	New ITC-technology. Formal training in use of new ICT.
Pharmacy	Service	31	Independent unit, but a part of a national chain	New ITC-technology. Continuous training by the pharmacy train headquarters (concerning new products)
Engineering company (SA)	Information	30	Independent	No
Wooden production	Manual (Information)	275[2]	Independent unit	New HRM with a new personnel manager Introduction of communication technology
Engineering company (MET)	Information	38	Independent	Communication as a part of the IT system
Engineering company (2K)	Information	40	Independent	Result-based reward system. Internal trainer. Rather intensive cooperation with local training providers (company also selling special courses)

[1] Number of employees in the company; [2] Only the white-collar workers (e.g. planning engineers and administration staff) participated in our study, due to the wish of the manager. Thus, these employees were defined to represent information work.

Recruitment of the companies

In Jyväskylä, the companies were recruited according to the criteria set jointly by the WORKTOW consortium. Existing databases (catalogues and lists) of local companies were used in recruitment, because they also contained the necessary background information (e.g. size of the company). A total of seven (7) companies were recruited. A summary of the characteristics of the participating companies is shown in table 22.

Results from the Jyväskylä study

An overview of the situation in the SMEs at the start of the project

The seven SMEs exhibited some common characteristics. We were faced with a rather *turbulent business environment* when beginning work with the companies. Many of the factors causing this turbulence concerned SMEs' external environment or the boundary domains (e.g. external communication and information flow in and out of the company) and were related to their location in a broader business-systemic environment (e.g. client-relations, competitors, rules & regulations, etc.). On an organisational level, reflections from the macro level situation became most visible and concrete in everyday situations with regard to changes in technology and its use. At the same time, these latter changes were enabling even greater changes to take place.

At the time of starting our fieldwork, most of the companies had entered the *second wave of computerisation.* All the companies had recently, or were currently, launching communication technology and had extended employees' access to net-based information sources. Thus, more hardware in terms of numbers of PCs and more powerful software had been introduced. The use of PCs had broadened both in terms of the functions for which they were now used and the number of staff having access to them. Therefore, even if the older workers were already familiar with computers and their use, a giant step was now being taken towards a much broader use of them in terms of various tasks and purposes. Some companies provided shared PCs for employees to enable them to practise its use, even if it was not necessary for their work tasks as such. After this step, in most companies it actually was not possible to manage one's work without having information and communication (ICT) skills at least on some level.

Management in many companies *had acknowledged the challenge, which the ageing of the workforce* was posing to their company. On the one hand, they were somewhat uncertain about what action to take in relation to 'local' demographic development and its inevitable consequences for both retirement planning and the manpower situation in the company. They had neither the competence nor the wherewithal to deal with the situation. On the other hand, in relation to the theme of our study, older workers were, generally speaking, not considered a problem in these companies – on the contrary, they were seen as highly competent workers.

Taking these issues further, we sometimes observed a kind of *déjà vu* related to the first wave of computerisation in the 1970s and 1980s. For example, the *uncertainty and worries expressed in the face of the new technology (ICT-competence)* were similar to those experienced during the introduction of first wave computerisation. As then, the worries now were how to cope with the change, whether one can learn to use the new tools, how the work overall will be affected by the new tools, who will get what kind of hardware and software, changing responsibilities and new or changing job tasks. The latter resulted from the fact that not everybody in a company received equal treatment when new hardware was purchased in the company and new ICT possibilities launched (reported in Tikkanen, 2000c). In addition, regardless of how overwhelming the new computerisation was, some differences still remained in how these changes affected various groups of personnel. Accordingly, in traditional industrial bases, the more highly educated employees were all involved, whereas the less well educated were given less access to computers (e.g. a shared computer in a production hall, mainly for learning purposes). In service industries, these changes more often involved the less well-educated workers. Furthermore, the coming of the Internet meant more problems with language than before. One problem was related to understanding foreign languages, but other issues related to understanding coded computer language as well as sometimes information in a printed form as has been described in earlier studies (Edwards, 1998; Hein, 1998; Kananoja, 1993). These worries relating to technology and appropriate levels of competence were more pronounced among older workers, but were also discerned among younger workers with less formal education.

Human Resources Development. Table 23 below shows a descriptive summary of the human resources in the SMEs and training possibilities.

Learning Environment Analysis (LEA)

Survey-based LEA-data from Jyväskylä was involved in description of the results in part III earlier in this report[5]. This chapter, therefore, describes mainly those LEA aspects that were not included in the joint WORKTOW survey.

Learning at work

Learning motivation and skills were generally rated good among the employees. Motivation and skills, but not age, were viewed to have direct impact on learning ability ('if one wants to learn something one will also succeed'). Personal characteristics were rated as more important to learning motivation, learning skills and even learning ability than age.

Age and learning. The results both supported and contradicted common stereotypical

Table 23 Personnel characteristics and training possibilities in SMEs (N=167)

Companies	Human resources	Training possibilities and provision in the company
Nursery (n=28)	Young staff, 24-54 yrs Female dominated, Low education Young statuses[1]·Short careers	The staff provided formal training programmes related to IT (Internet & e-mail) and client service.
Engineering SA (n=23)	Age-balanced staff, 24-48 yrs Male dominated, High education Young statuses, Balanced careers[2]	Not good possibilities for training, except in highest positions. Management: mainly on-the-job training, provided by staff and suppliers/clients.
Bank (n=12)	Older staff, 33-57 yrs Female dominated, High education Balanced statuses, Long careers	Extensive training provided for the staff during the company reorganisation. The last one was a course on e-mail.
Engineering MET (n=18)	Age-balanced staff, 25-59 yrs Male dominated, Low education Young statuses, Balanced careers	Employees: not good possibilities for training Management: training mainly provided by staff, suppliers/clients and consultants.
Wooden Production site A (n=25)	Age-balanced staff 30-55 yrs Gender balanced, High education[3] Young statuses + some diversity Balanced careers	Employees: not good possibilities for training. Management & staff in higher positions: good training possibilities mainly provided by staff and consultants.
Wooden Production site B[4] (n=29)	Young staff, 26-51 yrs Male dominated, High education Young statuses, Balanced careers	Employees: not good possibilities for training. Management & staff in higher positions: good training possibilities, mainly provided by staff and consultants
Pharmacy (n=12)	Age-balanced staff, 25-59 yrs All females, High education Balanced statuses, Balanced careers	The staff participate regularly in new product-related training, provided by the pharmacy chain headquarters. Some tiredness among staff with regard to training reports the manager.
Engineering 2K (n=20)	Age-balanced staff, 27-62 yrs Male dominated, High education Young statuses, Balanced careers	The company has an in-house trainer. Cooperation with local training institutions so that this company also acts as a provider for courses in their special competence areas.

[1] Refers to total length of job-careers among the employees; [2] 'Balanced careers' refers to a balance in the lengths of employees' careers; 'short/long careers' refers to short/long dominated careers in the company; [3] In this company only the white-collar workers participated. [4] This site only participated in the base-line survey, but not in further interventions.

thinking about the effects of age on learning. On the one hand, age was viewed as a highly 'personal' and individual matter that does not therefore have a commonly recognised impact on learning. On the other hand, age was also viewed as having a dual effect on learning skills and abilities. On the positive side, an individual was seen as becoming more motivated to learn and receptive to new facts with advancing age. Learning was also seen to become easier due to improved judgement concerning important/less important issues (one knows what one needs to learn more about), and through improved selectivity and prioritisation. An individual would also possess broader background knowledge against which new knowledge could be assessed. On the negative side, age was also viewed as making it more difficult to break routines and habits, to affect memory in a negative

---

[5] There is a complete final report available in English from the WORKTOW study carried out in Jyväskylä. For further requests contact the author (see contact information at the end of this report).

way making learning a slower process, and to make it more difficult because of distant/ fewer experiences of learning.

Employers mostly agreed with employees that age is not important, but were generally somewhat more reserved and emphasised more individual variety than employees.

"Teaching" skills. Employees rated their skills for sharing knowledge ('mentoring' or 'teaching') as rather good and improving with age. One exception among the companies was the MET engineering, where considerable improvements were needed according to the owner-manager. Important issues, which were mentioned as having an impact on the practice of sharing competence in a workplace, were work experience, ability and the courage to ask questions (admit one's limits), organisational climate (secure, supportive, open), and the organising of work to make internal 'teaching' possible (related e.g. to the pace of work).

Employers were again somewhat more reserved in their views and emphasised individual differences. Some of them also reported that experience is beneficial in helping others, but also that those who might have something to share with others are not always able to achieve this.

Job competence

Competence and a competent employee

Competence defined. Being analytic about and able to evaluate one's competence was easy and 'obvious', but also very difficult, requiring the existence of external (including collegial) and internal feedback systems, as well as awareness of and continuous sensitivity towards these systems. More experienced workers were more analytic than those with less experience. In some respects, it was easier to define the competence of a co-worker: employees and employers seemed to have a fairly *clear pre-concept* or *meta-level understanding* (cognitive map or criteria) and could exercise appropriate judgement as to when someone is or is not a competent worker. When making judgements about one's own competence or that of co-workers, observation of one's own success in managing one's work as well as various environmental clues (indicators) in the workplace was used. When it was observed that an individual's work was going well and the company's business was also doing well, high levels of individual and organisational competence were inferred. This required analytical skills from the employees. As environmental clues of competence, various feedback mechanisms and information related to one's work and to the intra- and inter-organisational environment, were also used. Therefore, it was necessary for an employee to (i) be familiar with what environmental clues to observe, (ii) be sensitive towards these clues and observe them at least periodically if not continuously, (iii) be able to read and understand them, that is, to analyse, interpret and process them, and finally (iv) to develop initiatives directed towards appropriate changes if necessary.

Competence was viewed as complex, dynamic, and temporal in terms of capability and external demand for it. This complexity extended beyond one's own job tasks and areas of responsibility and acknowledged various levels of competence: individual, social or collective, job tasks and company level activity involving a company's external relations. Thus, being aware of one's own competence and its strengths and limitations, was only one aspect of a broad view of competence. The employees, especially in the service sector, pointed out that it was just as important to be aware of the competence of one's co-workers. An important part of one's broad, total competence was knowledge of the workplace and work organisation in the sense of what kind of material, social and cultural resources were available there. Temporality in competence was mainly related to project type of work among engineers. Thus a person could be defined "competent" at one time, but "not competent" at another, for example, when there is no demand for one's competence[6].

Sources of competence. Competence was much less related to formal training (although the pharmacy emphasised basic training) than to work experience and learning from work, as well as to personal characteristics. Employees valued job experience even more highly than did employers, whilst employers valued personal characteristics as the most important source of job competence. This latter difference was most pronounced between older employees and employers. Table 24 shows these differences as they were revealed in tasks given to employees and employers in interviews.

The task we gave to employees was to define their total (100 %) job competence so that it reflected the three (given) main sources of competence – training, experience, and personal characteristics – in their 'right' proportions in one's work. The instruction was to think of one's current job competence and all the training and experience gained throughout one's lifetime. Correspondingly we asked the employers and management to evaluate the competence of the employees in their company. Table 24 shows the results by age and work status.

As Table 24 shows, job experience was rated as the most important among the employees, contributing with an average of 44 % to the total competence. Personality was rated second in importance (32 %), while formal training contributed to only approximately one quarter of total job competence. There were slight differences between the companies, so that in the three engineering companies training was rated *the least* important source of competence (range 19-22 %), while the nursery (greenhouse), the company with least formal education background among the employees, rated it highest of all companies (28 %). Job experience was rated most important in the three engineering companies (range 47 – 51 %) and least in the pharmacy (34 %). Instead, the latter rated the significance of personal characteristics highest of all companies (41 %).

No statistically significant differences were found between older and younger employees. Nor were there differences between the views of the employees and employers concerning the significance of formal training, although employers tended to value training even less than the employees. Instead, there were major differences between them in valuing experience (ANOVA $p<.01$) and personality ($p<.001$) as a source of competence. While

Table 24 Sources of competence by age and status, N=57 (%)

	Personal characteristics	Experience	Training	TOTAL
Employees (n=47)	29.2	46.2	24.7	82.5
-45 years	29.1	44.7	26.2	63.0
45+ years	30.0	48.0	22.3	47.0
Employers (n=10)	43.3	35.8	20.8	17.5
-45 years	41.7	41.2	16.7	30.0
45+ years	44.0	33.3	22.6	70.0
Range by company	29 - 41	34 - 51	19 – 30	0 – 70
TOTAL (N=57)	32.0	44.0	24.0	100
-45 years	30.3	44.4	25.3	57.1
45+ years	34.3	43.7	22.4	42.9

---

[6] This is actually what happened to older workers towards the end of the 1990s. Whereas they had been highly valued competent workers just a while ago, change of skill demands in working life, rather than of their actual skills, resulted in defining them as less competent than the IT-skilled younger workers.

the employees thought job-experience to be most important to overall job-competence (46 %), the employers valued personal characteristics highest (43 %). This difference was even more pronounced between the older employees and employers than between the younger groups respectively. Thus, there was a joint age and status effect on these ratings.

How can individual competence be developed?

The fact that training was hardly ever involved in discussions about competence also meant that reflections on competence development scarcely referred to employers and management and their role in it, that is, for example, through training provision. Typically, there was no long-range planning - financial, substance-related or strategic - of training and development in companies. Training provided by the employer was typically very narrow (tailor-made) and reactive (needs-driven).

Instead of training, individual activity and initiative, motivation and responsibility, as well as informality - highly personality-related characteristics - were emphasised in this context. The most important "teachers" were considered to be the work itself and colleagues. In the same vein, most employees were aware of their own role as teachers and in providing in guidance when needed. Many "teachers" also pointed out that "teaching" often also resulted in one's own learning. Thus, competence maintenance and development at work appeared to be highly social activity in the SMEs. Other means mentioned were self-directed study and learning by reading information from suppliers, professional journals and other literature.

Competence vs. age and experience

One of the main findings in Jyväskylä's study was that competence based on mature work experience was highly valued in the SMEs.

The results from the interviews supported the positive value attached to job experience. The employees reported several general and company-specific positive consequences from job experience to competence:

- Professional competence is *mainly* built on through experience. Training only offered "basic" knowledge. The necessary social and communication skills in customer service develop through experience, and are influenced by personal characteristics. In planning work (working with information) a broad understanding of the total production process can only be obtained via solid experience.
- Experience makes one *more certain and secure* concerning one's competence – makes work easier to manage
- Experience makes *learning* new things *easier and faster* – because one already has some knowledge on which to build further and because that improves understanding
- Experience makes *decision-making* and finding new knowledge *easier*
- Experience helps to know the "house" (workplace) and thus where to look for help and information when needed.

In one engineering company (2K) the employees also pointed out a negative consequence: when one has learned enough through accumulated competence, one may become less exited about new knowledge. However, this was related to the rewards system, i.e. to the limited possibilities in SMEs to provide for more challenging job tasks as a result of new learning.

Accumulation of an amount of experience was not, however, seen directly to add competence. The employees mentioned various factors, which distinguish **any** experience from a learning experience. As existing literature has shown (e.g. Ellström, 1999; Engeström, 1994), a common denominator of these experiences was that they were not "easy", that is, non-routine. They were positive or negative, but not automated (novel situations or rarely faced); they involved conflicts and contradictions; and they were followed by debriefing, processed individually or in a group. The older engineers, however, pointed out that after decades of acquiring job experience, they rarely faced totally new or difficult situations. Rather they described their work as one of "organising old bricks

77

in new ways", according to the wishes of the clients. Further, when faced with a problem, finding a solution was not the biggest problem: "when you have done planning work for 20 years, in every problem situation you can surely come up with ten different solutions" (Engineer, 47 yrs). In these cases, the challenge was more about choosing the best solution to the problem at hand (more of this issue in Tikkanen, 2001).

Employees' evaluation of how age impacts on competence revealed some differences depending on the age of the evaluator him-or herself. Younger employees reported both more and clearer age-effects than the older workers did. Again among employers, there were somewhat more variation in how the impact of experience was viewed with regard to competence. The positive value was fairly clear, but more emphasis was given to personal characteristics and individuality.

Competence reserve?

The existence of a competence reserve - unused or underused skills and knowledge - was confirmed by the interviews, especially among the employers. Differences were found between companies and branches.

Most employees thought they could fully use their competence in their work, whilst most employers and management thought there was a competence reserve among the staff in their company. According to management, the latter was a result of various factors: project-type of work (competence demands vary), no systematic monitoring of existing competence (not all competence is known in the company), and less intensive use of competence among more experienced workers (less need to 'show' all of one's competence as the younger workers typically do). In this context the employees often referred to the pace of work, claiming they could use all their competence in their work. In one of the engineering companies, however, the opposite was pointed out, that is, that the pace of work is so strict that it is not possible to use all of one's competence. In client service, the employees sometimes felt that they could not use all of their competence (in wooden production A and in the bank). In the bank, the views of the employers and employees were most strongly contrasted and in the engineering MET most in agreement.

Flexibility in working life

Questions about flexibility were drawing from the frequently stated claims that people become less flexible through age and that this would be a specific problem and disadvantage to older workers in working life compared to their younger counterparts.

There should be more flexibility, but with regards to what?

Requests for more flexibility were most typically related to flexibility in *working time*, holidays included. Part-time work and part-time pensions were also an indication of this kind of flexibility, at the same time as increasing flexibility demands from other workers in the workplace. Flexibility in terms of working load and time was generally not a problem in the companies. On the contrary, in some companies, seasonal flexibility was very much liked among the employees.

Job-task and competence-related flexibility were mentioned but much less often than working time. Flexibility in job tasks was viewed ambivalently; pride in one's well-managed work was weighed against broadening of skills and increased appreciation for the work of colleagues. Job rotation was not systematically adopted in any of the companies. The wooden production company A had tried it earlier, but it had resulted in a lack of clarity concerning job responsibilities and in general uncertainty of who does and knows about what. As an advantage of shifting job tasks, the employees mentioned that it increases their appreciation of the work others do. Companies varied with regard to flexibility requirements, the employers in the nursery being most determined and demanding. The guiding principle for them was that 'everybody must be able to do everybody else's job and whenever it is needed'.

Employers, but not employees, also mentioned the need to develop flexibility in *pay*. In none of these companies were wages flexible, but flexibility in working time (extra hours) was typically compensated by leisure time.

Is there flexibility in this company?

According to the managers and supervisors, the employees had been very satisfied with these flexibility arrangements and they had been well internalised. Regular seasonal variations in the wooden production company A, for example, had become a practice specifically warmly welcomed among the employees.

Causes for some dissatisfaction among the experienced employees were that employers were somewhat less flexible towards them in return, especially in project-type work. Another issue was that demands for flexibility were not required equally from all employees. Instead, there were persons or sections, which were or had to be, more flexible than others. The manager in the bank also mentioned that the trade unions were restricting flexibility, especially with regard to wages.

Management and employers considered older workers with fewer family responsibilities to be somewhat more flexible than their younger counterparts.

Future perspectives

The questions on future perspectives were inspired on the one hand, by activity theory and the concept of a zone of proximal development. On the other hand, the poor employment situation in Finland and the related somewhat discouraging climate in respect of older workers was considered relevant to views on learning and competence development.

Future of the company. Most employees viewed the future development of the company in a positive light. As a minimum, continuation of a stable situation was anticipated. Reasons given for such a viewpoint were related to the quality of products and to competent employees. Nevertheless, the employees were well aware of the vulnerability of small businesses as well as the unpredictability of project-type work.

In the nursery particularly, the management had various visions and plans concerning the company's future development, and in the bank, a growth of volume was expected. Challenges mentioned for the future in these SMEs were the development of client service (pharmacy) and the development of a management culture oriented towards less centralised direction and more employee participation (engineering 2K). One engineering company (2K) clearly reflected the interconnectedness of the personal situation of the owner-manager and the company. The manager thought that the company was suffering from some kind of lack of stimulation and new vision in the stabilised situation following the establishment of the company and the seven years of its existence. At the same time, the interviews showed that the manager himself lacked any views concerning his own future prospects and career development. He commented that he had considered changing back to being an "ordinary, hired engineer-employee".

Future of employees of various ages. Views held among the employees and employers concerning the future of workers of different ages in the SMEs varied from no changes to positive or negative anticipation. The variation was most pronounced **between** the companies rather than **within** a company. Employers and management emphasised that personality, rather than age impacts on future prospects of an employee. In client service, employers emphasised the importance of maintaining broad age-structures among the staff to match the demands from the clientele. In some companies some differences nevertheless were anticipated to develop because:

- the older workers were thought to be more oriented towards retirement (engineering MET) or because the company had adopted a positive view of early pensions (pharmacy)

79

- the status and value of older workers were considered to improve because of the lack of younger workers willing to enter the field (engineering MET)
- older workers were considered to have better prospects because their jobs were more diversified and more responsible than those of younger people (engineering 2K).

One's own future. Employees were mainly confident concerning their own future in the company. Concomitant with their views concerning the future of the company, they anticipated that their overall employment situation in the company would stay the same or develop in a positive way. Yet many anticipated changes in their job tasks due to future development plans in the company (nursery, bank) or to changes in equipment for working (all engineering companies). Employees wished that quieter business periods, which were always anticipated to follow better times, would be used for training and development. However, employers/ management pointed to a dilemma facing SMEs this sense - when there is money for investing in training and development, there is no time, and vice versa.

A summary of workplace learning in SMEs

The following is a summary of our observations concerning work-place learning in SMEs in general and SMEs as learning environments:

- Systematic attention to learning in the workplace and monitoring of job competence was almost non-existent.
- Hence, in workplace development, enhancing learning and developing supportive work environments for learning were typically not an issue.
- Documentation of individual and collective competence in SMEs did not exist. This information however, was considered to exist to a sufficient degree in the heads of the managers concerning their subordinates.
- Employees and management held somewhat different views about how well employees' competence is known and put to use in SMEs (employees more positive).
- Attitudes towards learning and training were generally positive. Age differences in attitudes were very small. However, employees and management held systematically different views concerning attitudes to learning and training among employees (employees more positive, employers emphasised individual differences).
- Learning culture in SMEs was rated to be fairly positive, especially among the older workers, with little variation between companies. However, obtaining feedback from one's work, and support and encouragement for participation in learning activities were considered problematic by a majority of employees.
- Senior-junior compositions were fairly commonly used in competence development in workplaces. However, these roles and the work done among the older employees were typically taken-for-granted, rather than specifically credited or rewarded.
- Management support for workplace learning was, in most companies, rather poor, other than for the targeted training provided. Management's attitude was based on a rationale according to which employees need to be active and take the initiative themselves in order to get support. In other words, management did not consider it necessary for them to make the first move. One company (the nursery) was an exception, with strong managerial vision and a push towards learning and development.
- Attention was rarely paid to any transfer of learning from formal settings (courses) to the workplace.
- Employees and management rarely defined their companies as more of a learning organisation than other SMEs in their field. In fact, thinking of one's company in relation to notions of learning was somewhat difficult.

Local Networking Seminar

The local networking seminar (LNS) was arranged by the local WORKTOW group. It was attended by managers from the SMEs participating in the project, representatives of various local training providers (each gave a presentation of their training provision available to SMEs), an EEDC representative, and a Project Manager from a relevant European Social Fund SME development project presenting experiences and results from the project.

The idea of local networking was generally acknowledged to be very useful and certainly needed. However, the actual participation rate by management was relatively low, the main reason given being time pressures at work. Thus, for many employers/managers, favourable reactions to the idea of networking were more likely to remain in the realm of wishful thinking than in actual practice. Many would like more opportunities for them to participate (appropriate networks and information about them would be required) and wished that they had more time for this kind of activity.

A major argument in favour of local networking among managers was that it would provide support to the otherwise lonely enterprise of running an SME. Other important reasons were competence needs, effective information flow, high learning potential in networks and the broader options that this kind of activity provides to small business. The main requirement for the success of such networking was to have the right kind of consortium in terms of business in order to avoid "intra-net" competition.

Local training providers reported that the seminar was the first of the kind they had attended. According to their feedback, the experience was very good and encouraging. Needs for more joint local forums like this were expressed to meet the needs of small businesses.

Information packages provided by trainers were highly appreciated by managers attending the seminar. The managers reported they are facing an enormous flow of training marketing/ advertising, and feel they are drowning under it. Therefore, they expressed a wish that a service could be provided whereby ranked information about local training provision could be compiled. This could be produced in the form of comparable information concerning the quality and usability of various types of training relevant to their needs and purposes.

The most popular type of training providers with whom the managers in SMEs wished to be involved in these networks were the continuing vocational education and training institutions. Their attitudes towards cooperation with university institutions and departments was much more hesitant and reserved.

Results from the local networking seminar extended to various levels, depending on the participant/company and its experience in this line of activity. Some participants started discussions about communication and cooperation between the local actors (SMEs, training providers and EEDC). For some, it strengthened their views concerning the importance of this kind of activity, and others became inspired about the value of initiating such local cooperation.

Evaluation of the research-based learning intervention in Jyväskylä

Evaluation or follow-up of the LI in Jyväskylä was conducted as thematic interviews with the managers of the SMEs. The broad developmental approach we adopted to learning interventions meant that we extended the evaluation interviews to cover the effects of WORKTOW beyond the specific network building and included all the field activity in the project. The LNS and its effects were described in the previous chapter. Therefore this chapter describes the results relative to the goals a company had set for WORKTOW-cooperation and to the overall possibilities of SMEs for participation in research-supported development.

81

Effects of the WORKTOW intervention

Overall impact. In all the SMEs, at the end, it was primarily used as a tool for the management. Employees were much less involved. In several companies they were, in fact, passively excluded from the project after the initial data collection. A summary of the most important impact or impression from WORKTOW to companies is shown in Table 25.

According to the feedback from the managers, WORKTOW had provided systematic new knowledge to management, in particular on views and attitudes towards learning and training. On that level the interventions had worked well and had improved motivation in and enthusiasm for the work in HRM. They were also considered helpful when planning HRD in the future in these companies.

However, the managers and other contact persons or the HRM personnel in the companies had mainly kept the LEA-results and -reports. One company had provided a shorter version of the main results in an internal information bulletin. Some companies had circulated the LEA-report, but there had not been a follow-up to this, beyond coffee-time discussions. Some managers expressed a wish that the researchers would come and present the results to the employees. In some companies the result was that older employees became an issue. That is, attention was paid specifically to them and their situation in the company for first time, thus increasing their visibility. In some cases, managers started to reflect upon their own ageing.

Table 25 Management's views about the main impressions from WORKTOW intervention in the SMEs

SME	WORKTOW left the company with...
Nursery	...attention now paid to older workers and their learning etc. which not thought of before ...local networking seminar was excellent ...not much to employees ...project offered a discussion partner to the management concerning HRD ...new strength & believe in and support to HRD development
Engineering SA	...uncertainty concerning the concrete target of the project ...quite a lot of information, but difficulties in seeing how to utilise it ...confirmed the understanding of the manager about the situation and attitudes among the staff in the SME ...some new knowledge concerning the employees' views on learning and development
Bank	...little concrete with what to do with HRD
Wooden production A	...systematic knowledge on the learning, training, attitudes and HRD in the company ...useful comparisons with other companies ...information on employees' positive attitudes towards new technology and learning
Pharmacy	...new information on that the training provided does not always match the desires of the employees ...information about positive attitudes toward ageing and learning among the older workers ...different knowledge and contributions, but have not been possible to share it with the employees ...no concrete actions
Engineering 2K	...contented feeling concerning the attitudes of the employees, especially of those among the older workers ...little very concrete

Note: The engineering company MET did not participate in evaluation interview because the manager was on a 2.5 months leave at the time the interviews were made.

Management did not find it all uncomplicated to put the knowledge, which WORKTOW provided and which they defined as 'general', to concrete use in companies. The manager of the company in wooden production described that "next phase and real *new* things will follow as this new knowledge will be put into the practice in the company". However, there was some variation between the companies. In the two engineering companies (SA & 2K), the managers reported that the results offered no reasons for new action or initiatives in their companies, but instead, as in 2K the manager pointed out, "The results did set his mind at ease and reassured him with regard to the attitudinal atmosphere and learning climate in the company".

Effects vs. expectations. Most managers had made the decision to participate in the study with an open mind and without specific expectations. This was because for all SMEs, this was the first time they had participated in research cooperation and/or with a 'general' goal setting. The comments on 'little concrete' could, however, be interpreted that management had had expectations of concrete guidance and actions to be implemented in companies.

Perhaps due to low expectations, several managers described the results and the overall experience of participating in the project as positive and stimulating or that they exceeded expectations ("was not a typical university 'paper' study"). More precisely the mangers pointed out that:

- they had wanted more knowledge on the views of the employees and they had received this (wooden production A), as well as new knowledge to support the company's HRD and practice (pharmacy)
- although it was not directly obvious how to utilise the results in a concrete way, they had tried to concentrate on thinking about how that could be done in practice (engineering 2K)
- the interaction and close communication between the researchers and the company were experienced as positive, although it was not expected (used to more passive approach from university researchers) (engineering SA)
- they expected concrete help for HRD in the company, but although did not exactly get it, they experienced the project overall as positive, because of frequent communication and contacts with the researchers (bank)
- they felt that university was running another ('traditional', 'not up-to-date') paradigm (social work & humanism) rather than what is prevailing in reality in working life today ('teamwork', 'sports spirit') (bank)
- the timing of the project was good with regard to the company HRD development work, because training was being planned (nursery)

SMEs and their possibilities for participation in research-supported development projects

None of the companies had previously participated in research concerned with learning and training, or in a study with such 'general' goals as WORKTOW had had. Some companies, however, had participated in other kind of studies and development projects with clear business- or technology-related goals (e.g. e-business, marketing surveys, social medicine, client surveys).

Research cooperation impacting on company development. The overall approach to research cooperation was mainly very positive, as was indicated by the initial willingness by the SMEs to participate in WORKTOW. The possibilities for SMEs to participate in research cooperation were seen to be good and to serve working life well, when it comes to products, HRD, client service, marketing, etc. Several arguments were given to support this line of activity. The following examples explicate the most important ones of these:

- HRD is a difficult area in SMEs, but it can and should be supported with this kind of research project. This kind of cooperation should be the direction in which working life should be developed (nursery).

- Development of working life is as difficult an area as research cooperation is; however, very important and needed (bank).
- Being involved in a research process is often of utmost importance because it inspires one's (management's) own thinking (bank).
- Research cooperation provides systematic knowledge to build on in the company, and small companies usually do not themselves have the competence to provide that kind of systematic knowledge (wooden production A).
- Training and motivation for development are among the companies' utmost secrets nowadays, so concrete and practice- oriented research in this area is highly welcome (bank).

These examples show how managers in SMEs feel inadequate with regard to their own competence concerning development in a hectic and turbulent working life, and how they feel that research and knowledge from outside the company, but further cultivated in cooperation inside it, could be of help. Although research as such, then, was experienced as valuable, the attitude the managers held was not totally uncritical either. Rather, research in general was too often blamed as rigid and unable to meet the reality of the companies/working life. The two engineering companies (2K and SA), in particular, were rather reserved in their opinions concerning the usefulness of research cooperation in general. They did not totally deny the value of this line of activity, but pointed out the necessity of having a concrete focus for it. Concrete in this context referred to usefulness to the company. The general focus - as was seen to be the case in WORKTOW - was not totally excluded, "but it loses its meaning if it is continuous activity" (2K).

Besides time and pace of work, having a "concrete" focus in the research and for it to thereby serve specific needs in the company was a highly important framing factor for most companies. General academic research was considered less desirable and even a waste of time. Some examples of the preconditions for research cooperation were as follows:

- Main criteria for such a cooperation is that the *focus is very concrete* and the *results* are *measurable* (preferably in cash) immediately (engineering SA)
- Cooperation should be *concrete and targeted*, general academic research is less desirable – but not too practical & concrete either, somewhere in between (pharmacy)
- *Needs- and impacts-oriented* training research would be needed, fulfilling a special function in relation to people (trainees, company staff) and training provision, to ensure a match between training and needs (pharmacy)
- Focus of studies should be *clear, limited and needs-driven* - research projects with a general focus are of less interest (wooden production A)
- "Paper" ("purely" academic) research is less interesting and maintains barriers between research and practice (nursery)
- As a project, WORKTOW has been useful and interesting due to *continuous and frequent communication* between the researchers and SMEs during the process (nursery).

Discussion and conclusions

On the basis of the results from the Jyväskylä-data, the following conclusions relative to WORKTOW-objectives can be made:

Job competence - Recognising, valuing and utilising the knowledge, skills, experience, and attitudes of older workers in work and learning situations.

- The competence of older workers was generally appreciated and considered strong rather than problematic. Exceptions were individual cases, underlining the greater importance of personal characteristics rather than age.

- Thus, the negative attitudes towards older workers, generally reported, did not get support from the results of this study.
- Competence is by and large taken for granted in SMEs, with relatively little attention paid to it, certainly not systematically. This is perhaps even more the case with regard to more experienced workers than those with less experience.

Learning at work - Learning of older workers within work settings:

- Personal characteristics were considered very important to learning and competence, not age as such. Employers and management especially, seem to emphasise individual differences in learning and competence among the employees.
- Very little attention is paid to learning at work. Support was provided for workplace learning and development for younger workers, often by more experienced senior workers. However, attention was typically not paid to learning and competence development among the latter, nor was their work as mentors or in-company 'teachers' specifically accredited or rewarded.
- Transfer of informal learning is working well and is confirmed in learning and teaching at work. However, attention is not paid to transfer from more formal training settings beyond tailoring and narrow targeting of courses provided.

HRD and lifelong learning for productivity and against exclusion

WORKTOW succeeded in providing more systematic information and knowledge concerning the situation in the companies around the themes in focus: learning, training, competence and its development, HRD, ageing. New thought processes and reflection among employers and management around these issues was enabled during the project.

HRD in SMEs was typically not an issue, and not taken as a central activity area (comparable to productivity and success in business) and employees were not seen as the most important resources relative to the other areas (e.g. products, clients) and to a competitive business environment. Management did not have the experience, nor the competence on how to deal with the type of knowledge provided in WORKTOW in this area. It was typically defined as 'general' in SMEs, as an overview-type of knowledge, rather than central to the company's agenda. Thus, we conclude that employers and management in SMEs need external support and resources (related to competence/knowledge and financing) both to develop awareness in HRD and to develop practice in companies in this area. Furthermore, in studies like this, a longer follow-up period for more concrete actions in these SMEs is needed. To provide analysis and new knowledge is only the first step. Employers and management in SMEs do not necessarily have the competence to interpret and put such knowledge into practice, but need support and guidance in doing this.

However, companies varied in this regard, size and age of the company being central factors. Bigger companies were more aware of the importance of HRD. A good example of the importance of age was the bank. In their recent major reorganisation process, training and competence development had been provided for the entire company personnel - among whom the average age already was rather high – rather than excluding the oldest employees on the basis of obsolete competence.

Internal communication and information flow in SMEs can and should be improved. The management/employers typically considered the knowledge on learning and HRD provided in this study, as new to them, indicating that communication on these issues internally, even with small number of employees, is low.

In R&D-oriented work in SMEs, it is not sufficient to provide analysis and knowledge from the situation concerning learning, attitudes and competence development ('general' knowledge). Equally important is to provide

85

follow-up and to help the management and employers to put the knowledge into practice. Therefore, a further conclusion is that the new learning imperative (Gavigan, 2000) in working life obviously challenges the competence of the management in a whole new way. Management need to develop their own competence in how to deal with the new area of learning support, competence development, and development of working environments from the point of view of learning environments. This involves new skills in how to communicate and cooperate with various external training provides, as well as analytic skills concerning monitoring of the situation in companies and among various groups of employees (poorly/highly educated, age-groups, different jobs and vocations, etc.). Developing new, easily manageable measures for the latter would be very useful.

Future time-span is relatively short in most SMEs, especially the smallest ones, making long range planning and investments in personnel development problematic. The consequences are most severe in relation to investments in training and development.

Diversity of workforce contributing to learning organisations -

Employees were well aware of the need for diversely competent employees in terms of quality and quantity to guarantee the best possible productivity. Similarly, the employers and management generally also emphasised the value and importance of diversity of employees, not least because of the diversity of the clientele. The latter was especially the case in service companies. However, thinking in terms of learning, and not just in terms of working, was somewhat new in SMEs. Therefore, thinking of workplaces in terms of learning environments and learning organisations were also new issues, only just beginning to emerge.

ENDNOTE:

1. List of publications to IKÄOPPI-subproject. Supportet by The Ministry of Health and Social Affairs. (Learning at work in IT-intensive environments):

Kenni-Lehtonen, T. 2000a. Työntekijöiden kokemat muutokset työssä uuden informaatioteknologian myötä. [Changes at work following IT changes as experienced by the employees] A paper presented at the Nordic conference on Adult Education, Forskning i Norden, 25-27.5.2000. Nordens Folkliga Akademi, Göteborg, Sweden.

Kenni-Lehtonen, T-M. 2000b. Uuden informaatioteknologian käyttöönotto kahdessa case-yrityksessä. *Kasvatustieteen pro gradu työ (Master's Thesis in Education).* University of Jyväskylä, Finland.

Tikkanen, T. 2001. Learning at work in technology intensive environments. In Proceedings to the *II Int'l Conference on Researching Work and Learning.* 26.-28.7.2001. Faculty of Continuing Education, University of Calgary, Alberta, Canada, pp. 493-500.

Tikkanen, T. 2001. Learning at work in technology-intensive environments. Presentation in the Annual Nordic Conference on Adult Education *Forskning i Norden,* Oslo, Norway, 28.-30.5.2001.

Tikkanen, T. 2000a. *Experiencing the changes brought by IT and their consequences in SMEs.* In S. Tøsse et al. (Ed. Committee) Reforms and policy. Adult education in Nordic countries, Trondheim: Tapir, pp. 161-182

Tikkanen, T. 2000b. Teknologia siivittää työssä oppimista pk-yrityksissä (Change in technology lending wings to learning in SMEs). Hyvä Ikä – Kansallisen ikäohjelman tiedotuslehti, 3-4/2000, p. 11. (Information Bulletin of the National Age Programme)

Tikkanen, T. 1999. *Education and training for older workers.* In Proceedings from a Conference on Active Strategies for an Ageing Workforce. Research and Development Centre, Social Insurance Institution, Turku, Finland. Ch. 23.

Tikkanen, T. & Kenni-Lehtonen, T-M. (forthcoming). Ikääntyvien työntekijöiden työssä oppiminen. IKÄOPPI-projektin loppuraportti. (Final Report)

Learning interventions as evaluation and data feedback of dialogic practices and career development

Kolbein Lyng, Norwegian social research (NOVA)

Rationale

The basic method used in this intervention was surveying perceptions of competence, age and learning, and using the data from these studies as feedback for discussions of how and why the relationships between competence, age and learning are perceived in the way they are. These discussions can form the basis of measures designed to enhance learning opportunities for older workers. This approach can be used at two levels:

- *Group level.* A basic assumption is that negative attitudes among older workers towards their own competence is reinforced by common "implicit" theories about ageing and performance – for example, by older workers avoiding learning situations and thus confirming stereotypes through a self-fulfilling process.
- *Individual level.* The learning process involved at this level can be summed up briefly as follows:

(i) Problem solving related to a new skill in learning computerised work involves a process of redefining the problem. Redefinition is a multidimensional phenomenon involving motivation and self-image.

(ii) Knowledge from others (here educator and researcher) can support a process of redefinition (as a zone of proximal development) and enhance motivation.

In the dialogue (with the "master"), the problematic definition of the older worker has to be elucidated and the researcher as educator has the role of facilitating this process and co-constructing alternative perceptions.

Selection procedures and research process

- Four companies that had been through major technological or organisational changes in recent years were part of the investigation. The design and content of the interventions were adjusted to fit the needs of each company. The focus was on the organisations as a whole, and the aim of carrying out interventions at the individual level proved to be difficult. The companies selected were mainly obtained through branch organisations.
- The aims of the selections were to sample companies with work types that would differ in relation to the advantages of long experience and hence the importance of age for performance.
- The intention was to conduct the NOVA-specific interventions as parts of a joint project with the Work Research Institute, where WRI would cover the organisational competence and NOVA the more specific ageing issues. The first period of the fieldwork and interventions took place as joint actions with the WRI. Two of the companies (industry and vocational training), the fieldwork and interventions were conducted separately.

The intervention consisted of a feedback process where perceived changes in work competence with age were discussed. Data on how work competence was perceived to be influenced by age was collected and indexes were computed for six different dimensions of perceived work competence. The six dimensions of work competence were:

- social competence
- professional competence
- creativity and learning abilities

Table 26 Overview of NOVA companies

Branch	Type of work	Size[1]	Autonomy	Natural Intervention
Graphic design	Informational/ manual	16	Independent	New technology
Insurance and downsizing	Informational	29	Subsidiary	Organisational restructuring
Vocational training	Communicational	40	Independent	New goals and change in structure
Process industry	Manual	450	Part of multinational company	New technology

[1] Number of employees in the company

- basic skills
- work morale
- productivity.

The findings were fed back into the organisations through meetings with managers and representatives from the Unions. The company profile on these perceived dimensions were, when possible, presented in comparison with data from other branches. The comparisons allowed for discussions of how the concrete work organisation contributed to individual development by comparing alternative work and organisations. The questions asked in these meeting were:

- How could the findings be interpreted?
- What could they tell us about opportunities for development?
- What could they tell us about the conditions for older workers?

The researchers' most important role in these meetings was to facilitate the discussions and summarise points of view.

The intervention was not carried out in the graphic design company because the contact with the company terminated. This was also the case in the insurance company although data for feedback was collected. In this company, use was also made of a work stress scale because this was one of the issues brought up in the fieldwork. These kinds of data were, however, not used in the feedback process because they were not considered relevant by the researchers.

In the vocational training company, the feedback had to be delayed for more than a year because of Union protest against the project. In the manufacturing company, feedback took place in a meeting with management and representatives of the Unions.

Analytical methods and tools

Within the framework of action research the interventions were analysed in the following way:

- Quantitative analysis of WORKTOW-questionnaires.
- Qualitative analyses of personal interviews.
- Re-analyses of data collected through self-perception and attitude scales.

Table 27 gives a summary of the fieldwork and interventions across the companies studied.

Results

The main results from the NOVA-study are as follows:

- The fieldwork showed a common evaluation of how competence is related to age. Social competence and professional competence together with work morale were all considered to improve with age. Basic abilities were considered to decline. A similar tendency towards decline was perceived also in relation to creativity and productivity.

Table 27 Overview of fieldwork, "natural" and research-initiated interventions, and follow-up studies

Company	Field Work	Natural Intervention	Researcher Intervention	Monitoring	Follow-up
Graphic design	Interviews, questionnaire, observations	Changes in technology and products employees.	Planning meeting with manager and employee representatives and feed back session with all	None	Meeting with manager and employee representative
Insurance	Interviews, questionnaire restructuring	Radical organisational	Meeting with management group	None	Meeting with middle manager
Vocational training	Interviews, questionnaire. organisation	New goals and changes in	Feedback to organisational manager	None	Meeting with organisational manager
Processing industry	Interview and Questionnaire	Technological changes	Feedback to managers and union representatives.	None	Meeting with managers and representatives

- The clearest differences in perceptions between the companies were seen for creativity and productivity. The impact of age on the dimensions of creativity and productivity where evaluated differently for different types of work.
- Explanations given for these differences were sought in different opportunities for learning within the specific work done and within the organisation.
- Although a number of suggestions were made as to how work and work organisations contributed to opportunities for learning and how age was perceived, few suggestions came up as to how these could be changed.

Learning interventions as participatory analysis of learning practices and career patterns

Leif Lahn, Work Research Institute (WRI)

Rationale

The interventions that were planned by the WRI-researchers could be divided into an "inductive" strategy and a "structural one" (figure 4). The former was inspired by a dialogical or participatory approach to action research (Schön, 1983; Gustavsen, 1992) whereas the latter is rooted in socio-cultural theory (Engeström & Middelton, 1995).

Inductive strategy

The "inductive" strategy is a strongly modified version of a dialogical approach, since it was reformulated to fit the project description and the thematic orientation of the WORKTOW-project. In addition, several pragmatic considerations were taken into account, such as the interest of participating companies in our key issues and their experience with research collaboration. Nevertheless, there are some specific characteristics of this type of intervention that are worth mentioning.

The focus is on collective and organisational learning. The key concept of dialogue refers to an arena of communication where local participants are taking part in open discussions of issues of shared interest. The idea behind such a construction is to promote a culture of public discourse at the work place and create a socio-technical infrastructure for innovative achievements. It may be useful to distinguish between three phases in this intervention strategy:

Anchoring. The learning intervention has to address problems or concerns that are experienced as important by the members of participating companies. Sometimes outside researchers have a useful role in making explicit what is more or less taken for granted (Argyris & Schön, 1996) An issue such as older workers and learning is usually not given attention in the daily activities of work places or in local discussions of human resource development. It has to be put on the agenda by others and in our case, both management and employ-

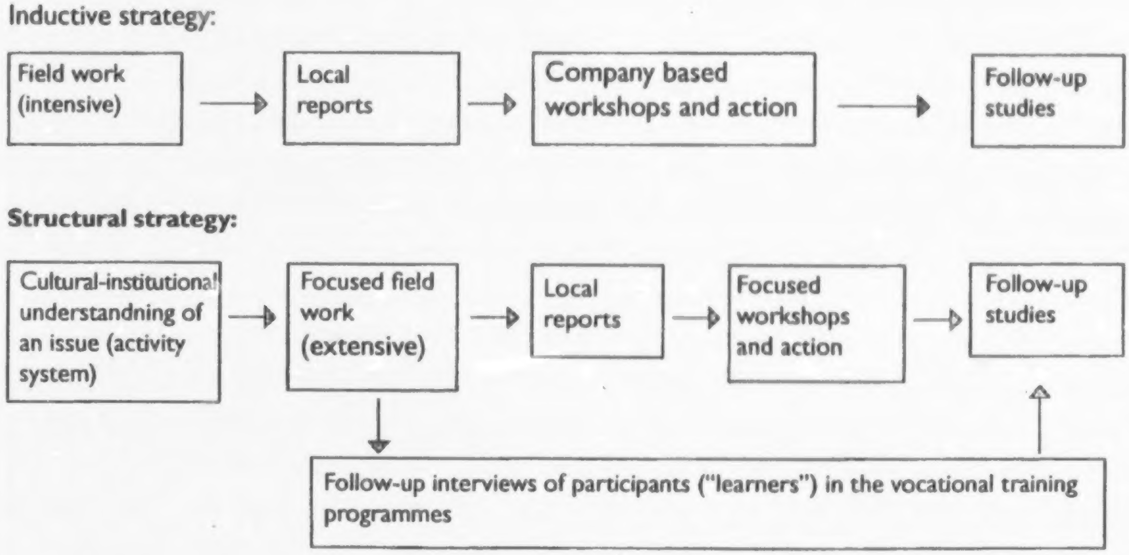

Inductive strategy:
Field work (intensive)
Local reports
Company based workshops and action
Follow-up studies
Structural strategy:
Cultural-institutional understandning of an issue (activity system)
Focused field work (extensive)
Local reports
Focused workshops and action
Follow-up studies
Follow-up interviews of participants ("learners") in the vocational training programmes

Figure 4 Inductive and structural strategies of learning interventions.

ees' representatives in the participating companies had to show some interest in the questions addressed. Also a deeper understanding was obtained through a combination of descriptive studies fed back to the members of the companies, and a joint discussion of interpretations, analyses and measures to improve the situation.

Project development. By organising a participative analysis of the descriptive studies we tried to improve the quality of our data and to involve the local members in discussions of actions to be taken. Even more important is the idea that they should learn methods and familiarise themselves with organisational "tools" that enable them to handle new challenges, such as lifelong learning, in a constructive and innovative way. As will be described below, this kind of broad mobilisation of the company did not take place in any of our cases. At best, some of the activities from the workshops and meeting where our findings were discussed were followed up by management with support from employees' representatives.

Institutionalisation of changes. By involving management and employees in developmental projects the organisation as a whole should be able to "learn to learn", and this capacity is reinforced by a socio-technical infrastructure. In our project, we never expected to arrive at this stage of the learning process since the issues of older workers and learning was not crucial to the competitive survival of the companies, and since the time-limit of WORKTOW (2-3 years) did not allow us to design a full-scale process of organisational learning.

Structural approach

The structural approach to learning interventions is inspired by socio-cultural theory and activity theory. A key concept is "zone of proximal development" (Vygotsky, 1978) in the sense that outside support from researchers should be an input to innovative actions taken by groups and organisations. These actions are made possible by the construction of new social tools such as a system of apprenticeship for adult workers. The role of external agents and researchers is to engage in a process of joint exploration and expansive understanding of the new practices. One of the assumptions is that a more complex model will make it easier to differentiate strategies and to learn from their implementation. In the WORKTOW-project, this kind of model-construction was only begun and it has been difficult to follow this process through on a longitudinal basis.

Some modifications were made in the LIs during the research process. In both cases the issue of older workers and learning was only one of the themes brought up by the researchers. However, the inductive strategy is more "naive" in the sense that the agenda is to a large extent defined by the local companies – or more precisely by the questions that are discovered during the fieldwork. The similarity with ethnographic research is evident and it thus represents an intensive approach (many variables, few units). The reports that are fed back to the companies describe the organisations as socio-technical systems and learning communities. The follow-up studies have a holistic orientation by mapping all the important changes that occurred in the companies after the workshops or feedback sessions. Also any effects of our learning interventions were to be documented during the follow-up meetings.

In the structural or socio-cultural approach to learning interventions, the unit of research is the activity system – in this case the Norwegian vocational training scheme for adults. Although our fieldwork was "grounded" in the participating companies, we intended to describe a system that included other institutions like vocational schools, public training authorities and branch organisations. New ways of cooperation between the educational institutions and industry could be seen as a case of "boundary crossing" and "horizontal learning" (Engeström, 1996). In the WORKTOW-project, the interest is in finding out how these innovations might include the needs of older workers. Compared with the ethnographic approach, the structural is more focused – on the training system and the issues of age differences. In addition, the feedback sessions and the follow-up studies are addressing questions related to this activity system rather than more general issues of organisational culture and learning environment. An important difference is that in the studies of vocational training programmes, their effects on individual learning and development were assessed though re-interviewing two or three times in relation to specific events (start up, exams, program evaluation).

Company recruitment

Theoretical sampling. Table 6 shows that all three types of work set as criteria for WORKTOW cases are covered by the WRI-sample, but there is an overrepresentation from the industrial sector (manual/informational). The size of the companies varies considerably although they all fall within the range of common definitions of SMEs. Some of them are integrated on the basis of business and marketing strategy with larger units, but all of our cases are independent production units with distinct human resource policies.

Continuous and pragmatic sampling. One of the criteria for selecting companies was the identification of a natural intervention or a transformation in the companies that we assumed would affect the situation for older workers and the learning environments. We had contact with several branch organisations and within the nutrition and the technical and printing industries, the recruitment process followed three paths. The printing companies were chosen through a combination of direct discussions with the managers of the companies and with representatives of the branch organisations, whereas the hotel and the insurance company were recruited solely on the basis of discussions with the local managers. The manufacturing plant and the wooden production company were selected through a more systematic search process where we actively used overviews of companies involved in vocational training for adults and telephone interviews with managers, branch representatives and providers of training. An important criterion was to include cases where older workers took part in the programmes – or had left them without sitting final exams.

Implementation of the LI

Figure 5 gives an overview of relevant interactions in the WRI-material. Not all the variables were used in each case.

Figure 5 An overview of background variables, learning interventions, "dependent" variables and baseline observations. In many of the case-presentations background and base-line observations are integrated.

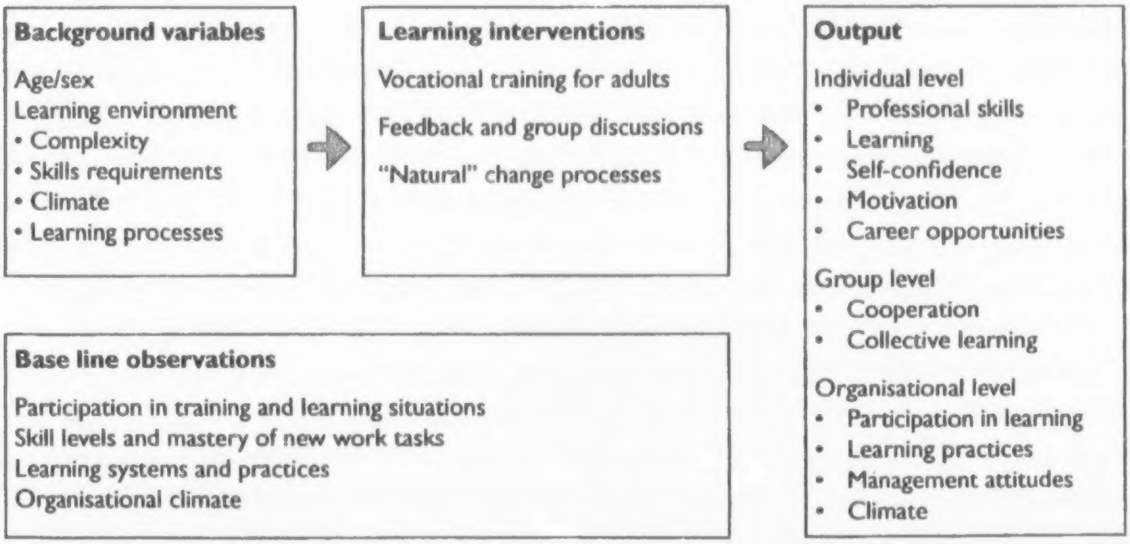

Background variables
Age/sex
Learning environment
• Complexity
• Skills requirements
• Climate
• Learning processes
Learning interventions
Vocational training for adults
Feedback and group discussions
"Natural" change processes
Output
Individual level
• Professional skills
• Learning
• Self-confidence
• Motivation
• Career opportunities
Group level
• Cooperation
• Collective learning
Organisational level
• Participation in learning
• Learning practices
• Management attitudes
• Climate
Base line observations
Participation in training and learning situations
Skill levels and mastery of new work tasks
Learning systems and practices
Organisational climate

Table 28 summarises the main characteristics of the WRI-interventions as they were carried out in each company.

Results of the WRI-study

The biographical data suggest that the WRI-cases represent a mix of small and medium-sized companies and a range of age distributions. We omitted those sectors such as health and social care where female workers predominate – and also companies with a professional profile, such as a law firm.

In the majority of cases, no dramatic changes in technology and work organisation had taken place in recent years, but one of the printing companies and the insurance office had been going though radical "turnarounds": In the former, this was as a result of developments in graphic tools and in the latter, as a function of organisational redesign.

A major contingency when considering the work place as a learning environment is the extent to which work tasks and skills are specialised or integrated and shared among several workers. In the management literature of the last decade, the trend has been to advocate team based production and overlapping experiences (Nonaka, 1996). We saw a similar development in the service sector and the high-tech graphic company, whereas this kind of restructuring was slower in traditional industrial plants.

In most of the companies, skill requirements were undergoing a change eg the develop-

Table 28 An overview of fieldwork, "natural" and research-initiated interventions and follow-up studies

Company	Field work	Natural Intervention	Researcher Intervention	Monitoring	Follow-up
Printing	Interviews, questionnaire, observations	Changes in technology	Meeting with manager and employee representatives to plan a workshop with all employees. These ideas were dropped by management.	None	Interview with manager.
Graphic design	Interviews, questionnaire, observations	Changes in technology and products	Planning meeting with manager and employee representatives and feed back session with all employees.	None	Meeting with manager and employee representative
Insurance	Interviews, questionnaire.	Radical organisational restructuring	Meeting with management group.	None	Meeting with middle manager
Hotel	Interviews, questionnaire.	No major changes	Meetings and feed back session with management group.	None	Meeting with top manager
Metal manufacturing	Interviews, questionnaire, observations.	Vocational training program for adults	Meetings with human resource manager and a feedback session with management, instructors, apprentices and union representatives.	Re-interviewing of apprentices and HRD-manager	Meetings with human resource manager and apprentices.
Wooden production	Interviews, questionnaire.	Vocational training program for adults	Meetings with management and feedback session with the health, environment and security committee.	Re-interviewing of apprentices	Meeting in the committee for health, security, environment

93

Table 29 A summary of WRI-cases in relation to main themes in the study

Themes	Printing	Graphic design	Insurance	Hotel	Manufacture	Wooden production
Employee profiles	Small firm Old Male Skilled	Small firm Young Mixed Skilled	Small firm Old Mixed Upper secondary	Medium-size Young Mixed Unskilled/skilled	Medium-size 30-40 years Male Unskilled	Small firm 30-40 years Male Unskilled
Production system technology	Gradual changes Specialised	Radical changes Overlapping	Radical restructuring Overlapping	Stable Overlapping	Small changes Specialised	Small changes Specialised
Changes in skill requirements	More skills in computerised work and contact with customers	More skills in computerised design and contact with customers	More skills in routine contact with customers/ deskilling	No major changes.	Minor changes into more overview of the whole process	More skills in error detection and overview of the whole process.
Learning opportunities	Access to necessary courses	New products and technology	Communication with customers/ deskilling process	Training newcomers, participating in projects, feedback	More attention to training needs and certification.	Strong management interest in training and learning.
Individual learning and training	Working with new machines and coaching	Working with new machines and contact with customers	Contact with customers and shorter courses/ new products	Instruction/ learning from others and taking part in projects	Working with more experienced. Program of vocational training (§20)	Working with more experienced. Program of vocational training (§20)
The situation of older workers	Management loyal towards the older – but uncertain future.	Young culture and new technology made older workers quit the company	Older workers out of work life through radical re-structuring	Older workers in managerial positions – learn in external projects	Older workers specialising in old technology, few taking part in training.	Older workers integrated in new production, many taking part in training
Contextual effects	Stable and large clients, but more competition ahead	New clients, new products, new technology and image	Turbulence in the financial sector affecting the local unit	Relatively stable situation	Certification necessary and recruitment problems	Certification necessary, recruitment problems, national competence-reform
Interventional effects	Gradual adjustments to new context. Shift in management and towards a more open atmosphere, but no improvement for older workers	A flatter organisation, direct contact with customers. Informal meetings. Our project supported these local initiatives. New management style excluding older workers	Development into an integrated sales-organisation. Radical down sizing and exclusion of older employees.	Our project pointed out the negative aspects of high turnover for collective learning. More attention to these effects among managers.	Vocational training programme quite successful Our project had the effect of putting the issue of older worker in focus and to make management think in terms of integrated production	Vocational training programme very successfull – with a priority given to the training of older workers. Our project supported the initiatives of the managers.

ment of skills in the use of computers, in communicating with customers and in understanding the whole production process. From the management questionnaire for all WORKTOW-cases, it can be seen that a slight majority of the managers expect a higher level of formal education among the employees in the near future. The WRI-data do not differ from this overall picture.

The learning opportunities vary considerably from one company to the other. In the service sector the challenges are related to so-called "horizontal" learning when working with customers or involving themselves in projects. In the industrial sector the push to support training activities comes from outside forces (quality requirements, educational reforms, labour market) or technological innovation. From the questionnaire material we see that almost all managers are expecting a rise in investments on training, and these results stand for all three countries.

Roughly three patterns could be differentiated in the learning processes at the work places:

The situation for older workers differed in the companies observed – even within the same branch. Age was not an issue in the service companies, but in the one example, this group of employees left during the radical downsizing process. In the hotel sector, late career is associated with managerial positions, and newcomers seem to leave the business at an early age. From our observations in the manufacturing plants we conclude that there is a growing appreciation of those in their fifties as an asset to the company. They were consequently invited to take part in programs of vocational education, but only very few accepted the offer.

In the printing branch, the changes in market, products and technology were so rapid that older experts were not believed to be capable of coping with the challenges. Thus they were expected to stick to the old technology.

The contextual framework of our learning interventions was not characterised by companies coping with turbulent changes – except for the rather dramatic restructuring of the insurance company. Major influences were externally created by requirements from customers, the national competence reform, initiatives to attract youth and new technology.

The effects of "natural" events that we could observe during our project, were of different kinds:

- No spectacular changes were observed. With reference to our hotel case, the management group tried to reduce turnover, and the small printing company was facing several challenges, but maintained the status quo.
- The companies were pioneering vocational training programs for their employees – partly as a response to external demands and a progressive strategy of human resource development.
- Both the repro company and the insurance office went through change processes that in very different ways excluded the older workers from "learning ecologies" in working life.

Our own interventions seemed to have a small effect when the situation was very stable as in the first cases above – or when the companies were reorganised or reorienting themselves as in the final cases. Consequently, our intentions and design were achieved more fully in the companies that wanted to something with their own learning environment.

Analysis and evaluation of learning interventions

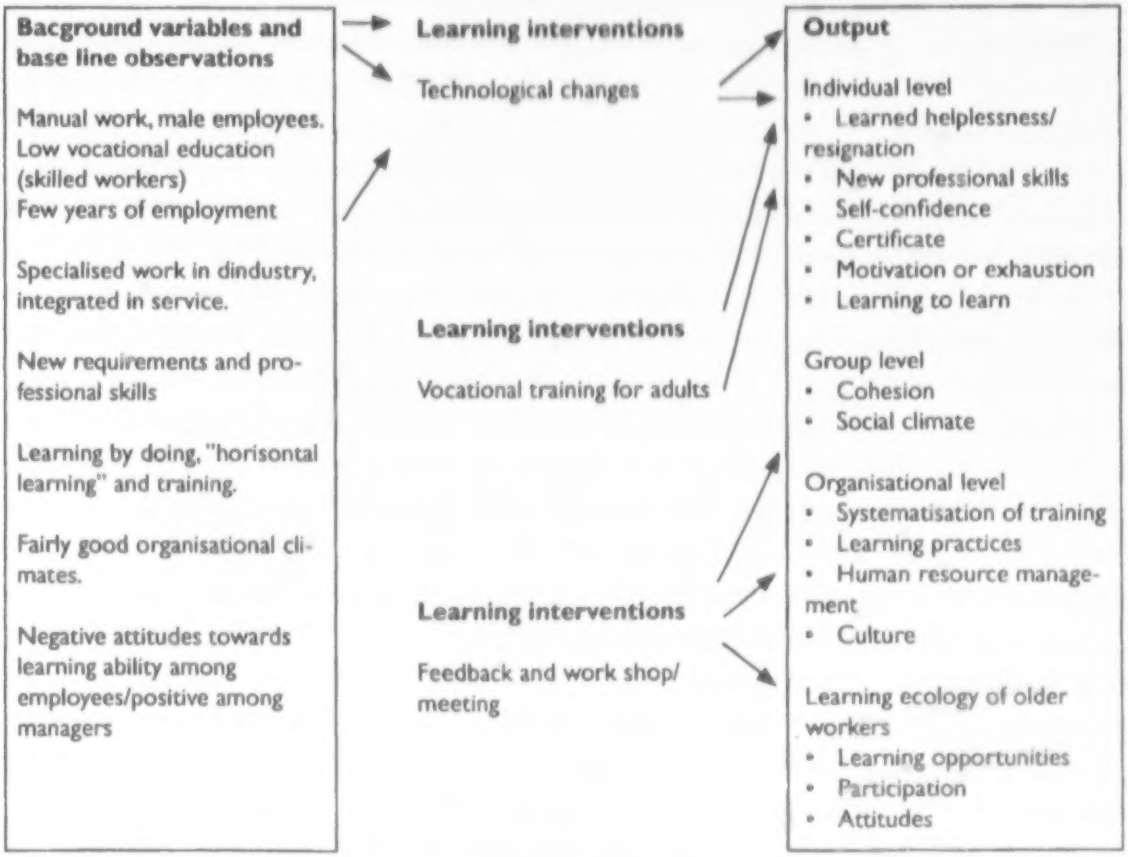
Another way of presenting the aggregate data is shown in figure 6. The relationships are not given any value, and many contingencies are not indicated. Here we will underline the following "effects".

- *New technology causing exit of older workers.* This was most clearly seen in the two printing companies, but in both cases, the employees at a late stage of their careers were offered the requisite training.

95

- *New technology creating new learning communities.* In the case of the repro company we saw how new electronic tools and a company in the process of restructuring may have occasioned the creation of a learning arena that excluded the oldest employees. A different picture can be seen in the case of the wood production company since some interest was stirred up by the opportunities of using creative computer assisted design for wooden products. This part of the curriculum was not job related, but it gave the candidates a better understanding of construction and could be used for hobby purposes.
- *Vocational training bringing about learning to learn and an improvement in self-confidence.* This was a general finding in the two companies that organised vocational training for adults. There were many statements from the candidates indicating that they took great pride in completing the programme – and some said they would volunteer for more.
- *Vocational training improving teamwork and social climate.* The formation of a learning group in the wood production company seemed to spread enthusiasm and new ideas to other employees.
- *Vocational training as organisational learning.* In both the companies that were involved in the §20-provision, both employers and employees emphasised how the programme gave the candidates an overview and a better understanding of the whole process – and indicated that it would contribute to the team building processes.
- *Vocational training to combat age barriers.* There is strong evidence in both the metal production company and the wood production company that a more positive view

Figure 6 Relationships between background variables, learning interventions and output on aggregate level


Bacground variables and base line observations
Manual work, male employees. Low vocational education (skilled workers)
Few years of employment
Specialised work in dindustry, integrated in service.
New requirements and professional skills
Learning by doing, "horisontal learning" and training.
Fairly good organisational climates.
Negative attitudes towards learning ability among employees/positive among managers
Learning interventions
Technological changes
Learning interventions
Vocational training for adults
Learning interventions
Feedback and work shop/meeting
Output
Individual level
• Learned helplessness/resignation
• New professional skills
• Self-confidence
• Certificate
• Motivation or exhaustion
• Learning to learn
Group level
• Cohesion
• Social climate
Organisational level
• Systematisation of training
• Learning practices
• Human resource management
• Culture
Learning ecology of older workers
• Learning opportunities
• Participation
• Attitudes

of older workers was expressed in meetings during the feedback and follow-up sessions than in the early communication with the companies. This was especially true in the metal production case where the attitudes were the least positive at the outset.

- *Reflexive interventions as waste of time.* In the insurance company, the turbulence was so strong that our feedback and reports were hardly noticed. Of course, parties in internal struggles could have used our observations as weapons used against each other – but we did not observe this kind of outcome.
- *Reflexive interventions as a confirmation of policies.* In most cases, our feedback was accepted and used to confirm the prolongation of a change process that was set in motion by managers or a combination of managers and employees.
- *Reflexive interventions as reframing.* In some cases such as in one of the printing companies and in the metal production plant, a new understanding of older workers seemed to have been achieved through our intervention

A summarising comparison of the learning interventions

Learning interventions compared

Table 30 presents a summary of the characteristics of the LIs developed and/or used in the WORKTOW-project. The table shows the main theoretical frameworks from which the learning interventions were constructed, the intervention methods and target-levels of the interventions (individual, group, organisational or inter-organisational levels). Finally the table shows a distinction between the strategic focus of the interventions, defined as learning activities in a life-project or as activities that are important for work performance. The categorisations are only suggestive, since, in reality, there is considerable overlap.

Tabell 30 WORKTOW learning interventions and some of their characteristics

Learning interventions/partner	Theoretical basis	Intervention method	Level	Strategic focus
Individual reflection on learning styles – Building Excellence (BE): the Learning Individual Programme /Keele	Experiential learning	Group discussions of inventory-profiles	Individual	Life
Employee development schemes (a governmental competence development programme)/Lancaster	Humanistic adult learning	Financial support and guidance of participants in the schemes. Focus on older learners.	Individual	Life and work
Evaluation and data feedback of dialogic practices and career development /NOVA	Socio-cultural psychology	Redefinition of problem by working with more experienced others	Individual/ Group	Life and work
Vocational training as a dual system of schooling and working /WRI	Distributed learning	Training programs for adult workers combining theory and practice	Group	Work
Feedback and broad developmental assessment/ Jyväskylä & WRI	Action learning and dialogical action research	Participation & analysis. Proactive evaluation of researchers' observation and own experiences.	Group/ Organisation	Work
Local learning network/ Jyväskylä	Network learning Organisational learning	Sharing of experience and practice and viewing opportunities for co-operation	Organisation/ Inter-organisation	Work

Table 31 WORKTOW learning interventions and some of their characteristics

Learning interventions	Results of interventions	Evaluation of intervention methods
Reflection on learning styles Partner: Keele	Older female workers in low-skilled jobs may be in a "pre-contemplation stage" with regards to learning – reflecting low opportunities for work place learning.	Inventory too complex for women in low status jobs. Time-pressure and little interest in learning processes among participants. Instruments should take the broader social and cultural context into account. Promising in analysing learning style and match with HRD-policies and practices. Innovative research in introducing a more focused method of analysing learning style – and in developing a biographical approach to older workers and learning.
Employee development schemes Partner: Keele	Older workers benefited from EDS Positive view on the competence of older workers among managers Interest in early retirement not related to lack of learning opportunities or feeling of being undervalued, but to work load and pressure - and constant change. Benefits from participation in courses, IT-training – and informal learning.	Scattered evidence of benefits from intervention to managers and workers – more positive view of older workers and a more focused approach to HRD.
Dialogical problem solving Partner: NOVA	Professional and social competence of older workers positively evaluated Lower rating for adaptive skills Experience essential in vocational training company Type of work limit learning in industrial plant	
Vocational training as a dual system of schooling and working Partner: WRI	Vocational training programme quite successful Developing learning to learn and self-confidence Improving social climate and team work Support of organisational learning. Combating age barriers	Issue of older worker put in focus. Supporting an age-aware HRD-policy. Advocating integrated production and learning.
Feedback and broad developmental assessment Partner: JyU, WRI	New technology at the work place creates learning opportunities or marginalises older workers Radical changes in organisations may lead to learned helplessness.	Rated valuable by managers; supported HRD in SME, with which an entrepreneur usually is rather alone. Knowledge provided rated "general"; help needed in how to concretely apply it. Increased awareness towards older workers. Encouraging comments from employees concerning the themes of the study. Interest in the companies on older workers reflected growing public attention.
Local learning network Partner: JyU	Agreement among participants to cooperate and improve the local interaction between SMEs and CVET-providers	Intervention rated as useful both by employers and CVET providers. Low participation rate among employers signalise about scarce resources, towards broad competence development in particular.

Comparison of the results of the WORKTOW learning interventions

In table 31 we have given an overview of the substantial results from the interventions and what new knowledge about older workers and learning is generated through our studies. Also some experiences with the intervention methods are assessed.

Summary of the effects of the research-based interventions

- In many cases, our interventions were credited with putting the issue of older employees and learning on the agenda. Some found support for existing or new solutions in our observations. However, it was sometimes the case that our feedback was hardly read or listened to.
- An important effect was demonstrated by the Keele-intervention in the sense that it identified contextual and personal conditions for "consciousness raising" among older workers – when learning styles are the focus. Similar effects were also found in Jyväskylä's intervention, and not only *among*, but also *on* older workers, among management in particular.
- In Jyväskylä, the intervention effects were mainly seen at managerial level, so that on the whole, it was utilised as a tool for the managers in helping them to obtain systematic information on the situation concerning WORKTOW-topics and for further planning of HRD in their companies. While the original goal was to include employees too, an important lesson here is that for a wider impact, it is necessary to involve the employees more intensively in the core-communication groups (contact persons in the SMEs), and for this purpose it is not a good solution to leave this group-formation up to the companies themselves, as was done here.
- In relation to programmes such as the Employee Development Schemes in the UK and the vocational training provision for adults in Norway, our research was adopted as a kind of evaluation of the system and of current practices – and a more differentiated discussion of experiences could take place.
- The evaluation of the intervention in Finland showed that the use of a university as an initiator of a developmentally oriented intervention into SMEs is still a new and somewhat alien concept. Management is still less familiar and less at ease in dealing with human resources as as important issue for organisational development than with other issues, such as production matters or clientele. This seems to be particularly the case in relation to research-supported development efforts. Managers who are somewhat more familiar with the issues seem to *think* of organisational development in cooperation with other training institutes, and to consider research as something academic and as such, rather obscure and lacking any practical value for SMEs. For most SMEs participating in the study in Finland, this was the first involvement ever with a research cooperation and in particular, with one with such a "general" orientation. However, the more intensive orientation adopted here was warmly welcomed by management, since it had a clear focus and observable greater immediate practical value.

IV Conclusions and policy implications

Summary and conclusions relative to WORKTOW objectives

The WORKTOW objectives related to five areas, ie: job competence (knowledge, skills, attitudes), learning at work , HRD and lifelong learning, diversity of the workforce and learning organisations, and case studies demonstrating the flexibility and productivity of the older European workforce and their significance in the discussion about social cohesion.

Each of these five objective areas will be discussed separately, albeit with considerable overlap between them. Finally we will briefly discuss the WORKTOW project from a methodological point of view.

Recognising, valuing and utilising the job-competence of older workers in work and learning situations

Positive attitudes towards older workers and their job competence

One of the main findings from WORKTOW was that the situation of older employees in SMEs appears to be relatively good. Managers and employees who participated in WORKTOW had a positive perception of, and favourable attitudes towards the knowledge and skills of older workers. We observed no major problems related to or reported by older workers in the different workplaces across the companies or countries. In fact, partners' findings lent support to the perception that considerable value is often placed on the experience-based competence of older workers. Qualities such as loyalty and stability were highly appreciated, as were the value and competence of experienced workers as workplace "teachers" or mentors contributing to competence development among less experienced employees.

The pros and cons of taking older workers' job competence for granted

Little evidence of poorer job competence among older workers. In most cases, the competence of older employees was taken for granted within the SMEs. This conclusion has both positive and negative implications. On the positive side, it was generally the case that the frequently quoted, supposedly stereotypical thinking concerning obsolescence and lack of competence among older workers was not supported by our findings. That is not to say that older workers would have been excluded from developmental challenges related to their job-competence to any greater extent than other groups of employees. Rather, individual differences were emphasised much more than age issues as such, especially by the employers and by manage-ment.

The results from Finland also showed that job experience and personal characteristics as sources of job-competence were more highly valued than formal training undertaken during the life course. From this point of view, the considerable appreciation of younger, more recently trained employees may not necessarily be grounded in their job competence, any more than the poorer appreciation of and deficit approach to the competence of older workers is to be found in the lack of, or obsolescence of, their formal training. Rather, this finding suggests that value judgements made concerning the competence of both of these groups within the labour force are based on other qualities and are largely socially constructed (Ellström, 1996b). Further-more, in Finland some signs already exist that suggest that the advantages and rates of return gained from new training are notably lower in the case of older rather than younger workers. Since our data does not allow us to confirm

101

this hypothesis, further studies should examine value judgements concerning occupational competence more closely. However, we suggest that the positive value of older workers' job competence observed here should be considered against the possibility of selection-effect (Salthouse, 1996). Our data does not give direct evidence as to whether those employees with the weakest competence had already left or been excluded from the SMEs that participated in our study. Nevertheless, indications of this effect were observed indirectly in the difficulties experienced, in some cases, of locating companies with sufficient older employees to participate in the study.

Little attention to job competence in SMEs. On the negative side, the taken for granted approach to competence meant that little attention was paid to monitoring, mapping and documenting it. Accreditation or rewards aligned to job-performance were also rare; they were most commonly found in project-type work. Individual competence assessments were rarely conducted beyond self-evaluation in developmental discussions in some larger SMEs. This situation, however, not only concerned older workers but all employees. Nor did it necessarily mean that the job-competence of older workers was not recognised or valued. Indications of in-company awareness of the competence of employees among employers and management were clear, as was the corresponding collegial-awareness among the employees. However, rather than being monitored systematically, this awareness or knowledge was gained informally in everyday work and tended to be retained by individuals, partially reflecting organisational-cultural competence. Thus, it was part of 'tacit' organisational knowledge on the one hand, and reflected the experience-based competence of management on the other. As suggested by Eraut et al. (1998) this type of competence can sometimes only be identified in a small number of individuals in the workplace (often just one individual) whilst other types of competence may be firmly embedded in organisational activities. The former type of knowledge is naturally highly subjective and relative and therefore susceptible to various environmental and situational influences, not necessarily related to the competence of the individuals concerned. Therefore, value judgements based on the perceived competence of an individual employee or a group of employees tend to put the individual or the group in a vulnerable position through use of this non-objective type of evaluation.

Considerable strengths in competence, but challenges in new instrumental-technical skills

High levels of skill in many areas of meta-competence. In addition to older workers' "unique" competence (high task and firm specificity) and expertise in intra-organisational competence (low task and high firm specificity), our findings provide evidence of a particular strength in their job-competence in the area of 'meta-competence' (Nordhaug, 1991). As described earlier in this report, the latter refers to the infra-structural competence in work organisations and is considered as a foundation for work performance in general, comprising a broad range of competencies (Nordhaug, 1991). Older workers themselves assessed their competence development through their accumulated experience ("compared to when I was young/starting my career...") with characteristics reflecting a range of meta-competencies. A great many of these characterisations indicated the strengths that older workers possess concerning communication and other inter-personal skills. Other examples were seen in analytic aptitudes and skills as well as in planning skills (e.g. in engineering work), capacity to tolerate uncertainty and skills in handling conflicts (e.g. in client service), cooperative capabilities, and ability to make judgements (e.g. prioritise various tasks under high work-pressure). This kind of personal competence was also highly valued by management who emphasised considerable individual variety in these characteristics. These characteristics also underline the power of learning from experience, and accentuate the limitations of the formal vocational training system, at least in its traditional forms, in respect of building this kind of central competence.

ICT-competence the biggest learning challenge. Paradoxically, the biggest developmental challenges to the competence of older workers were often found in the area of infra-structural competence or meta-competence. This indicates that defining what counts as total job competence, and in particular in its most subtle, though powerful domains (e.g. tacit knowledge), is not easy and is likely to escape exhaustive and all-encompassing categorisation. The main challenges for older workers were certain forms of communication, more precisely foreign languages and technical reading-skills (Kananoja, 1993) or media reading skills (Edwards, 1998) related to information and communication technology (ICT). Studies have shown that older workers in particular, can easily get lost in net- and symbols-based IT-environments, where existing job experience is of no use (Rantanen & Lehtinen, 1998).

In most companies, especially in SMEs in Finland, methods of internal and external communication and information exchange were in the process of being changed in order to make use of recent ICT developments involving the use of a personal computer. Older workers' inexperience in using coded language and sometimes more generally in working with information in a text-form (e.g. reading and understanding manuals or producing reports) can result in direct problems in managing everyday work. It can also have indirect consequences as a result of the attitudes and expectations of management and co-workers. Our data showed little in the way of actual problems, however, but developmental needs in this area were considerable in all age groups. In particular, in industry, IT-related learning needs were strong in both age groups - four out of ten reported a strong need for development. However, younger workers and management expressed rather less belief in the capacity of older workers to learn new ICT. Whilst this level of belief among younger workers was more generally related to older people, management emphasised strong individual differences **within** this age group.

The data showed clear age-differences in the use of computers in daily work only within industrial work (older workers used them to a significantly less degree), while other differences found were across sectors (highest in office work) rather than age differences **within** sectors. These findings are in line with existing studies (Parjanne, 1999; Rantanen & Lehtinen, 1998), which indicate that although use of IT is already fairly high in working life (e.g. 60 % on average in Finland in 1996) and increasing all the time, its use is directly related to the educational background of an employee.

We found clear cross-sectoral differences in the use of computers, but these were more pronounced among older workers. However, the age differences that disadvantaged older workers were greatest within industrial work. Additionally, there was notable variety among the SMEs in relation to problems of age-related technology-competence, the most dramatic example being an insurance company in Norway. However, a contrasting case was identified in a small bank in Finland where no age-differences in technology-related competence was found. In the latter case there was a strong belief in the competence of senior employees among management and was possibly due to extensive investment in their training and development in the organisational transition process.

Older workers' learning in work settings

Changing working life and learning at and from work

The changes taking place in working life and in their workplaces provided employees with both continual learning challenges and opportunities. Older workers were included in change processes and restructuring no less than their younger colleagues, so workplace learning was also common among older workers.

With regard to *the pace of work and learning opportunities in daily* work the age differences were generally small. In line with findings from earlier studies (Kilbom, 1997; Lahn, 1999; Paoli, 1997), older workers reported less control by machines, colleagues and customers. Existing literature has indicated that older workers suffer more stress and react more to the hectic pace of work than younger workers (James, 1996; Delgoulet, Marquie & Escribe, 1996), but our data showed no age differences in this regard.

Older workers rated the possibilities for developing their professional skills to be somewhat better than what the younger ones did, but these differences were not statistically significant on a general level. However, in industrial work, the older workers rated the chances of obtaining the necessary training to be lower than those of their younger colleagues. An intervening variable mentioned earlier might be the degree to which employees are facing innovations requiring up-skilling, that is, to what degree the everyday environment offers the stimulation and challenge of new learning.

Further analyses of the data (Tikkanen, forthcoming) have shown differences in how learning opportunities have been rated between employees and management and between the three countries. The management tended to very systematically rate SMEs to provide for better learning opportunities than what the employees did. The differences in these views were the biggest in Norway, where the ratings of the management were most positive of all countries. Employees and management in Finland rated the learning opportunities the least positive of all countries, while these two points of view were the closest in the UK.

In the UK, Finnish and Norwegian cases managers and employees attributed little or restricted participation in training to intensified work pressure e.g. tighter dead lines and heavy amounts of work. These observations are in line with the Third European Survey on Working Conditions 2000 (Merllie & Paoli, 2000) and national studies (Grimsmo & Hilsen, 2000). We found no clear indication that these trends vary with age. Yet they may have an adverse effect on the learning environment of older workers in many ways. For example, the time for active learning in daily work may be reduced, there may be fewer opportunities for reflection as new practices are created, more standardised teaching may be provided and little follow-up of formal learning sessions organised in the work place.

There is evidence in our study that older workers in branches experiencing turbulence are resisting learning opportunities since they require some personal investment, but the outcome is quite uncertain and possibly negative. For example, the senior employees in the radically restructured Norwegian insurance firm said older workers gave up when a positive trend was reversed. More likely however, is a slow process where older workers are not encouraged to commit themselves to innovative activities and gradually their self-efficacy is lost.

We found evidence of some age-related variation in change-related learning in workplaces, so that some older workers took advantage of the learning potential offered by these changes, whereas others experienced a 'learning fatigue'. Some variety in engagement in learning was also found across companies. In some cases, low levels of confidence in individual learning ability were observed among older workers who were involved in repetitive job tasks and who possessed poor basic skills. From a purely psychological perspective, low levels of involvement in change processes and lack of recognition of the learning potential it provides can result in active change resistance on the part of an employee (Gilhooly, 1998). Our data did not explicitly focus on change resistance or its relationship with age of employees, but many employees, older and younger, described how, in an IT-transition period, technology overly dominated their work and work processes, either through repeated problems or because of their unsatisfactory IT-skills. As a result, for many people, the basic criteria for job satisfaction, feelings of job control and autonomy, became threatened by IT-changes. This kind of development has been suggested to reflect some of the aspects in the culture of a learning organisation (Kuittinen & Kekäle, 1996).

The variety in our findings across companies concerning the outcomes of change-learning causality support the line of thinking, commonly found in developmental work research (action research) that workplace learning is highly contextual and situational. This suggests that the common rhetoric concerning the challenges posed by working life changes to workplace learning is too generalised and too vague to form a basis for a study of these issues. An example of this type of thinking is the study by Launis and others (2001) focusing on work-place communities during the transition period from old to new practices.

Another explanation for variety in learning approaches and effects resulting from workplace changes is offered from within the more general tradition of sociocultural constructivism (Billett, 2001; Billett & Boud, 2001). Here the argument is that workplace practices and other factors shape the attractiveness of opportunities offered in the workplace, and thereby also impact on how individuals elect to engage with the workplace and the various practices in it. This view underlines that the opportunities for workplace learning and participation are not symmetrically distributed. Our data does not allow us to draw definite conclusions as to whether the age of an employee might be a factor directly influencing how strongly opportunities offered by workplaces are experienced and interpreted from the point of view of learning. In fact, positive learning motivation and attitudes as well as perceptions of learning capabilities among older workers, suggest that chronological age as such would be of less importance. Rather, we should focus on workplace practices and other factors and actors (e.g. management), which together with individual issues form a more complex approach to the study of workplaces as learning environments (see discussion on Diversity of workforce and learning organisations later in this chapter).

Learning attitudes, skills, motivation, and ability rated as good, though with individual differences

Learning attitudes, skills, motivation and ability were generally rated to be good and evidence of significant age-differences was lacking. Both employees and employers stressed that the variety discerned in relation to these issues was not related to age but to individual differences. It was implicit in the responses that the older the target group under evaluation, the more were individual differences emphasised, in particular by the management. Single examples from colleagues at positive and negative ends of the spectrum were often taken up in discussions. However, the most positive views were more prevalent among older employees so that attitudes towards the learning capacity of older workers were significantly more positive among this age group. A similar tendency has been found in other studies (Lyng, 1999). However, some of our managers and employees displayed somewhat less positive attitudes when the issue of age and learning of new technology was raised.

The success of older workers in learning new skills in the workplace was generally rated as being as good as that of younger workers with older workers rating themselves even more positively than the younger employees rated them. The favourable attitudes expressed towards older workers' learning were often supported with measures taken by managers and employee representatives. Examples can be seen in the implementation of the Employee Development Schemes in the UK for a range employees, including older workers, the granting of priority to the oldest workers when admitting employees to a vocational training programme in Norway (wooden production), and in the involvement of all older workers in an extensive training programme in a major company reorganisation process in Finland (bank). However, we also found situations where the ideas articulated were contradicted in practice by ageist beliefs. Again, in many cases, this discrepancy was most notable when questions of new technology and learning were addressed.

ICT driving learning forward in the workplaces

The driving force for learning in most of the companies was the result of launching new technology, sometimes to match the demands and needs of the clientele. According to our findings, however, learning related to new IT was a two-edged sword in many respects. On the one hand, the drive it created for new learning was considered stimulating, positive, and motivational. On the other hand, technology and its management often began to dominate the actual work tasks and the way in which they were managed. This was not only because of the on-going learning required, but also because of the practical problems to be faced when the technology was not working properly. Feelings of control over individual work were in many cases threatened. These situations resulted in recognition of "impossible tasks" in work, described as problems in everyday work without real solutions that would be under the control of the employees themselves (Launis, Niemelä, Engeström & Kantola, 2001). These kinds of situations lead to various forms of 'bypassing' the actual problems and the development of sheer survival strategies in the everyday work environment. The engineers who gave an example, admitted that new software, or updated versions, was being introduced at such a rate that there was no chance of learning to use it properly before a new version was launched. These problems were usually coupled with time pressures, resulting in additional worries that there was no chance of exploiting the full potential of the new tools in order to improve the quality of what was being produced.

Regardless of the fact that ICT was proving to be even more of a learning and developmental challenge to older than to younger workers, a conclusion that can be made on the basis of our findings is that older workers seem to manage reasonably well with ICT in the workplace. In fact, in many cases they were coping rather better than the usual stereotypes would generally allow us to assume. For example, in the Finnish engineering companies, the young engineers pointed to the difference between them and older workers only in relation to the settings where the learning of ICT skills had taken place - the young engineers at school and the older engineers at work – but they had not observed any differences from themselves in older engineers' actual management of PCs in everyday work practices. We anticipate that within a 5-10 year time span, fears about older employees' capabilities with regard to learning to use ICT in workplaces will prove to have been groundless – indeed, the current situation is similar to that experienced with the coming of first wave computerisation during the 1970s and early 1980s (for literature see Beauchesne-Florival, 1990; Charness, 1990; Haarotyan, 1990; Straka 1990). This improvement in the situation of older workers will be further enhanced by the development of learning and training methods that will be more effectively matched to their preferred learning styles and will also take account of their readiness to learn (see Keele partner's intervention in the UK).

Our data also shows that competence needs related to ICT in the workplace are already often being used complementarily i.e. employees with different levels of ICT competence complement each others' skills in the job to be accomplished. Competence was sometimes also "traded" (different competences exchanged among employees) to secure a problem free progression of the work. An illustration of this can be seen in the example of the engineering companies in Finland where older engineers were better able to outline, plan and control the work in progress from a holistic point of view, whereas the "quick fingers on keyboards" approach of younger engineers and their superior knowledge of the use of some types of software were used to carry out smaller parts of the total work. Therefore, to some degree, ICT skills appear to be the same as any other areas of job competence (e.g. social skills, various knowledge, etc.) in that some employees are better at some aspects than others, but overall job results can be maximised through cooperation and through sharing of competences.

Learning as practice-based, social and informal

Not surprisingly, workers in the later stages of their careers had a *preference for practice-based learning and training.* Our results strongly support the findings from existing studies (Billett, 2001; Eraut, Alderton, Cole and Senker, 1999; van den Tillaart et al, 1998) in that performance in the workplace is highly influenced by other people's learning and that this learning can either be facilitated or constrained by the organisation and allocation of work, and by the social climate of the work environment. The data from the Finnish bank (reported in Tikkanen, 2001) particularly provided evidence that workplace learning is a highly social activity since it is based on various forms of knowledge sharing among employees. However, where there is direct contact with clients/customers, as in the example of the bank counter, any problems concerning this contact require rapid solutions and cannot be delayed as in many other type of work. In this case, a competent worker is required to know, firstly, which of his/her colleagues might know the answer, and secondly, to go to this person and ask for help. We return to the issue of knowledge sharing as a form of workplace learning later in the chapter on Diversity and learning organisations.

One of the cultural implications of the new politics of lifelong learning and open and distance learning seems to be a new recognition of the value of informally learned skills and knowledge. This shift is also reflected in renewed academic interest in "apprenticeship" and problem based learning as key concepts of a new pedagogical manifesto. This reframing of what counts as valuable knowledge has the potential to afford overdue recognition to the experience-based competence of older workers, to improve their access to new learning environments and to support and promote their personal development. Totally work-based, informally gained knowledge, which can often result in a narrow conception of expertise, should however be supported and complemented by a more abstract understanding of work processes, for example in modern production systems. This fact was emphasised by both management and employees in some WORKTOW companies.

Multiskilling and team based work. The information technology paradigm and related organisational demands towards multiskilling increasingly require a focus on individual and collective learning in organisations (Thång, 1997). In some of our companies, principles of group-based production were introduced, often in parallel with a multiskilling of the work force. Older workers are obviously affected by these changes, but some of the participants in our study were afraid that they would be "shuffled around" if they broadened their expertise. In a couple of cases, employees in senior positions clung to their traditional tasks since these were associated with professional identity, self-image and security.

HRD involving older workers facilitating lifelong learning and productivity and combating exclusion

Based on the evaluation of WORKTOW-interventions the following qualities should be included in the design of HRD programs involving older workers:

(a) Attention to the levels of basic skills.

(b) Improvements in those working conditions within the work environment that have been shown to contribute to the development of a learning environment.

(c) A system of needs-analysis and competence development planning that addresses individual differences among older workers.

(d)A system of individual and organisational competence analysis and its documentation, which acknowledges strengths as developmental starting points.

(e) Development of new career trajectories that might support "flexpertise" (Heijden, 1998) and learning to learn' among the workforce.

In addition, national initiatives are needed to reverse the general lowering of the retirement age in different countries across Europe since this tends to define the horizon for personal investments in training and re-socialization in the work place.

Radical restructuring of business can have negative effects on HRD, as is well documented in cases from different European countries (Knights & Willmott, 2000). One case in our study was a Norwegian insurance company where the older employees were the first to be involved in a process of multiskilling and integration of tasks. This innovatory phase was seen both as a challenge and as a threat since it meant sharing traditional expertise with younger colleagues. However, the turnaround and downsizing of the company into a small administrative unit and a call centre, geographically relocated, represented what could be called a "liquidation" of the learning environment and a reversal of the former positive process. Tasks were turned into specialised responses to customers' needs and the interaction between employees reduced to a minimum. These changes, coupled with redundancies and relocation, affected the commitment of older workers in a very negative way and a considerable number of resignations were reported.

With reference to a somewhat contrasting case in the same branch (finance) of the Finnish bank there was a strong belief in the competence of older employees and consequently also in their development. Then extensive investments were made in a major reorganisation of the company. However, as in the Norwegian case, the older employees often expressed feeling of insecurity, hence those who participated in the WORKTOW fieldwork appeared to have been pre-selected. Data from this company was therefore somewhat positively biased because some older employees found it the "wisest" strategy to keep quiet by not expressing their opinions in the WORKTOW research and to be loyal to the process of change.

Participation in formal, non-formal and on-the-job training

Only in regards formal training and within industrial work were the participation rates of older workers clearly lower than those of their younger counterparts. While a great majority of all employees (78 %) had participated in some form of training - formal, informal, non-formal - participation was most common in on-the-job (46 %) and formal (45 %) training. Among groups of older workers, the participation rate of those in industry was the highest across sectors (35 %), although the differences with other groups (in service and in office work) were very small. It was only in participation in formal training that statistically significant age-differences were found in that younger employees appear to have been favoured. In the other two forms of training (non-formal, informal), differences in participation rates were greater between sectors (lowest in industry) than between age groups (none of the 45+ employees in industry reported participation in non-formal or on-the-job training). The length of participation tended to be a slightly longer among the younger employees, but the differences were not statistically significant.

As indicated earlier, in several cases the need to provide training for employees in late career in SMEs was explained by referring to new technology and flexible work routines. As a general rule this ideology had an inclusive effect on the training of older workers, but in some instances the change processes were considered to be so rapid and radical that the expertise of older workers had lost any transfer value to new domains. From the point of view of training provided, however, our findings suggested that there is a major obstacle related to the prevalence of standardised training packages. They are usually not customised to the needs of senior employees, or to their readiness and competence for participation in these types of activities.

Learning culture in SMEs

Positive learning culture. In the questionnaire we asked about various aspects of the learning culture in the SMEs. The results showed that it was largely rated positively, particularly by the older workers. The only less positive exceptions were in obtaining feedback from management in order to perform one's job adequately and encouragement in asking questions. Management rated these two issues much more positively in the SMEs than what the employees did. With regard to the encouragement to ask questions, the employees' opinions were totally divided. However, age-differences in these ratings were almost non-existent, except concerning equality of success of older workers compared to younger employees in learning undertaken. In the latter issue, older workers were more positive in their ratings. In some cases, management was surprised by the positive attitudes uncovered concerning issues related to learning in their companies.

Management competence as a key factor in developing learning organisations. Given that learning organisations support and encourage active learning and development (Day, 1998), our results suggest that in many SMEs, the development of relevant key management skills, such as encouragement and support for learning and development, could be a starting point to boost the development of a learning culture and learning organisations. Similar observations underlining the central role of managers in developing learning-oriented working environments in microcompanies have been made in some other studies (van den Tillaart et al., 1998). However, until today the focus in research has rather been on attitudes to learning among the individual employees. As mentioned earlier, the attitudes were mainly positive, while learning practices were in many cases restricted by the circumstances pertaining in the workplace.

In one of the Finnish engineering companies, the top manager described a transition in the lifetime of the firm (six years) from a "pioneering phase" to an "office phase" or "senior phase". He added that this process also changed the learning culture to a less dynamic one. The more general point is that many SMEs are facing this type of life span of formalisation, growth and differentiation. From this point of view, it can be harmful to the learning culture in a company when the integrated work environment is split into subcultures. An owner-manager of an engineering company, who said that the developmental challenges of his company were reflected in his personal developmental challenges, underlined the central role of management in the organisational and learning culture in a small firm. Similar conclusion concerning micro-companies has been also made by van den Tillart and others (1998). In this case, the manager was lacking a clear vision for his personal-professional future development that was reflected in the lack of vision for the development of the company as well.

Organising HRD and learning in the workplaces

The data from the UK on the learning styles of older women in low status jobs suggests that there may be a personal history of non-learning in working life that should be taken into account when addressing issues of workplaces as learning communities.

One of our conclusions is that any normative guidelines for organising learning for older workers run the risk of being insensitive to the variety of learning situations in working life and the range of differential learning styles and strategies adopted in a late working career. Thus, there is a need to differentiate HRD strategies and practices in the workplace when targeting activities towards older workers. A general hypothesis of ontogenetic development, which suggests increasing inter-individual differences by age, also supports this argument.

A practice-oriented approach is commonly recommended as an educational method for adults. On the one hand, our data provides support for this kind of thinking. Older employees especially preferred learning methods, techniques and contents, which were closely related to their work. Learning was experienced as both easier and more meaningful when they were able to relate it to their existing knowledge base and skills, and its relevance to their everyday settings was not too complicated to be discerned. On the other hand, when exploring the Norwegian vocational training practices involving older workers, we found a wide range of preferences for theoretical over practical knowledge; group based over individually based instructional methods; and different views on the need for motivation of learners. One critical variable in learning preferences seemed to be the level of basic skills among the workers – rather than age per se.

We found that there was a difference in HRD practices and perhaps also in ideologies in how staff development is approached in the case of younger and older workers in SMEs. From the point of view of informal workplace learning, our findings suggest that, compared to older workers, learning and competence development among younger employees is more visible, more systematic, and planned and organised in a more goal-oriented way in SMEs. Those who were given executive responsibility for this developmental work were typically the more experienced employees. While the latter reported that this kind of mentoring and guidance meant, in many cases, innovative learning for them too, their learning was nevertheless given less prominence in SMEs compared to the corresponding attention paid to younger workers. However, our data suggest that, in most cases, this age-segregated HRD policy was not the result of a deliberate choice but was rather an unintended consequence of a number of 'old' and 'new' factors. Among the most important 'new' factors are the traditional beliefs concerning strong competence as being related to long work experience, stereotypical thinking about the negative relationship between age and learning ability and the invisibility of the issue of age in the workplace together with the existence of age-discriminatory practices.

Diversity of workforce in terms of age and competence contributing to learning organisations

As well as their structures and activities, organisational changes have the capacity to drive the development of learning organisations forward (Snyder & Cummings, 1998). This was also observed in WORKTOW (see the previous chapter on HRD above). However, awareness of SMEs as learning organisations and what that might mean in one's own company was relatively low among both management and employees. Regardless of this, we identified a range of changes indicating that a transition process was taking place in the SMEs from traditional, stable organisations towards becoming more dynamic, responsive learning organisations. The driving force behind the need for a diversity of skills in many of our companies, and the need to develop a learning organisation, was survival in an increasingly tough competitive business environment, rather than seeing skills and learning organisation development as the means of attaining this objective. Diversity among employees was regarded as a central issue in being responsive to the diverse needs of clientele (as in the charity organisation caring for people with learning disabilities in the UK) and in securing organisational continuity aside from changes. Other reasons given for this opinion were related to the many functions and various competences perceived as necessary for effective performance in flexible organisations, and to processes of knowledge creation achieved by combining a range of different perspectives. In addition, in terms of age and job competence, diversity of employees was generally perceived as an asset. However, our data does not specify what kind of complementarity is really sought. That is, what kind of competence mix would be advantageous in relation to what kind of challenges? Further studies should focus on examining the diversity of competence from this perspective.

Diversity of the workforce enables competence sharing as a central form of workplace learning

As mentioned above, our findings support the existing studies (Billett & Boud, 2001; Eraut, Alderton, Cole & Senker, 1998) which show that knowledge sharing is a common everyday practice in companies, and constitutes one of the most important forms of workplace learning. Competence sharing was considered very "natural" in WORKTOW studies. Thus our data underlines recognition of and respect towards the "sapiental autority" (Boreham, Shea and Mackway-Jones, 2000), in SMEs. Without this understanding and sharing of competence, workplaces simply would be dysfunctional, even high-risk environments. The latter has been exemplified in a study by Boreham and others (2000) in which the authors examined issues of work and competence in a hospital environment.

Turning to the practice of sharing competence in everyday work from the point of view of diversity of the workforce in terms of age, our data supports the notion of strong inter-generational solidarity in the workplace. Thus, contrary to the notion of poorer or obsolete compe-tence of older, compared to younger workers, we found indications of an intergenerational, collectively shared understanding concerning job-competence and its transfer in a life-span perspective. According to this understanding, less experienced (usually younger) employees know and achieve less, and hence need more help and support. More experienced (usually older) employees who have shown themselves able to achieve and who have more knowledge, are generally willing to help them and to share their competence. The "trading" of more technical competence, mentioned earlier, is part of this picture. From this point of view, competence sharing represents a form of tacit knowledge and an expression of cultural knowledge in the workplace.

Learning by sharing knowledge was well illustrated in the case of the two Finnish companies, the bank and an engineering concern (reported by Tikkanen, 2001). In the latter especially, younger engineers reported that, for them, 'working' virtually equalled 'learning', whereas the older engineers noted that, in their case, 'working' meant not so much 'learning', as 'sharing' and 'teaching'. However, both individual characteristics and organisational factors (e.g. climate and culture) had an effect on how such intergenerational competence sharing actually took place in practice. Thus, according to the view of learning organisations which use shared learning as well as learning results as criteria that dictate structures, functioning, and culture of an organisation (Snyder & Cummings, 1998), our findings indicate the existence of relatively strong learning cultures in some SMEs.

The functioning of this inter-generational competence sharing in workplaces is, however, dependent on a range of organisational factors, which impact on the potential for collaboration and communication among staff in a company. One of the most central pre-requisites is knowing who knows what in the individual's work unit or organisation. In other words, one central aspect contributing to an employee's total competence in an increasingly collaborative work environment is to be familiar with the human resources among one's colleagues. Furthermore, the increase in networking in working life also requires knowledge concerning the availability of competence and appropriate resources within one's network. In one of the hotels, we found that this kind of competence was an asset for experienced managers when new business and marketing projects were planned.

Investing in older workers

Several of our companies, especially in Norway and Finland, had problems acquiring competent workers in the labour market. They realised that an alternative to the recruitment of new competence was to update that already available among their existing workforce. This strategy however, appeared to be a double-edged sword for SMEs, as indicated in the example of the small Finnish engineering company, since any investment in the training of older workers made them more attractive to the external market.

Another rationale for investing in experienced workers was exemplified by the Norwegian wooden production company. Managers and workers' representatives thought that the creation of a regional image of themselves as a work place that took care of their workers throughout their professional lives would help their long-range recruitment position.

Knowledge management and knowledge creating companies underline the value of invisible assets in working life (Krogh, Nonaka & Nishigushi, 2000). Such a reorientation in manage-ment thinking certainly gives older employees a chance to have the value of their work experience recognised and rewarded. We found also evidence as to how systems and practices have been designed and implemented to facilitate the exchange of old and new skills. One example from our material is the Finnish pharmacy that encouraged participants completing training to share their knowledge in the workplace with other employees after the training was complete. This was reported to bring unrecognised competence to the fore. However, in one of the Norwegian printing companies, this kind of knowledge management had the effect of excluding the older workers, because the sessions were organised as a combination of work-related communication and social team building. These ideas seemed to be contrary to the value system of the more experienced employees who made a clearer division between work time and leisure time.

Early exit options related to images of one's productivity and developmental potential

Although the WORKTOW-project did not study the interaction between work, retirement and early exit directly, we could not be totally impervious to the ups and downs of early retirement schemes in the participating countries. Some of our employees looked upon this option as a very attractive one – even if they believed they could remain at work for many more years. In a few cases, reference was made to top managers leaving their position with "golden handshakes" – some receiving these benefits even though details of their poor achievements were public knowledge. Two interesting mechanisms relative to our discussion here - meta-motivation and social comparison. The former refers to people's tendency to expect that they can leave "with honour" even when they are no longer performing their work role adequately. The latter suggests that employees expect to be treated on equal terms with top leaders.

The other mechanism has more serious consequences for an age-inclusive policy. Provision for early exit tends to have an impact on an individual's self-concept of him/herself as a productive employee who is able to learn – and consequently, the employee begins to make mental preparations for retirement many years before the actual transition (Reichborn et al., 1998). These effects need clarification through further studies.

Flexibility and productivity of the European older workforce and their significance in the discussion about social cohesion

The socio-economic framework has changed radically in the participating countries during the lifetime of WORKTOW project. A shift has taken place from a national and European concern with early exit from the work force and soaring expenditures on pension schemes, to a focus on older workers as productive and innovative members of the labour market. This change has been accompanied with a more general political focus on work environments, on workplace well being and on active employee (citizenship) participation concerning all the workers, as well as on possible measures that could be taken to enhance and support positive development in workplaces in this regard. One of the central areas were these measures are being developed is human resource development (HRD) and management (HRM) through the practice of learning and training interventions, under the ideology of lifelong learning. Taking this developmental trend as a starting point when thinking on the themes and problems addressed in WORKTOW, as well as its results, we could therefore say that in one sense time has been on our side during the project.

National frameworks and WORKTOW interventions

In all the three participating countries new national measures/programmes have been launched or existing ones strengthened during the lifetime of the project, to address the problematic mentioned. In an exploratory

BEST COPY AVAILABLE

way we have shown, how nationally supported initiatives - the Employee Development Schemes in the UK, the large programmes on ageing workforce and working life development in Finland and the educational (competence) reform in Norway - have contributed to these aims, in combination with provisions and practices on branch and company level. We have also addressed the general challenges of participation in learning activities of low-educated older workers. In our cases, females reflecting upon their own learning styles, and what relevance the style has to their participation.

From the point of view of ageing of the workforce, the overall trend in the ideology of lifelong learning has been to give added weight to later professional career and measures to support it as well as to address and acknowledge experience-based competence gained in workplaces. Employee Development Schemes (EDS) in the UK reflect both an optimistic educational philosophy and a business interest in upgrading the workforce. One of the central focus areas is the developmental needs of the individual workers and matching them with those of the companies. One partner in the UK applied these EDS as interventions targeted to older employees in the WORKTOW companies. The results showed that these interventions can be useful also for the older workers and support their professional and personal development.

In Finland three national programmes have been launched to address the problematic in working life. The National Age Programme has focused exclusively on older workers (45+) with a strong emphasis on initiatives supporting development practice in lifelong learning. The programme has been successful in making the older workers more visible and efforts (e.g. massive media campaign) have been made to influence attitudes towards the older workers. The National Working Life Development Programme has addressed the issue of and problems in working life more generally, with a range of interventions initiated for that purpose. The learning interventions developed in WORKTOW have thus been very much in line with the ideology and goals in these two national programmes. The third national programme launched at the end of WORKTOW project focused on well being (socio-psychological and physical) in workplaces. This programme extended the traditionally dominated orientation from occupational health by incorporating aspects in occupational competence as well as management and organisation of the workplace, into the broad picture of well being. Again WORKTOW interventions addressed in the Finnish SMEs were in line with these goals, although we did not explicitly address health-related issues.

The Competence Reform in Norway, which was launched towards the end of the WORKTOW project, supports tripartite projects in working life, and in some cases the issue of late professional career has been addressed. A concerted national effort to reverse the lowering retirement age has been launched and is presently gaining some momentum. WORKTOW interventions developed, applied or evaluated in the Norwegian companies were also very much in line with the goal setting in the Competence Reform.

WORKTOW interventions enhancing flexibility and productivity of older workers

Individual level. One important lesson from the Keele-intervention based on learning style questionnaires and diaries was the relevance of a biographical approach to this kind of diagnostics. The results also suggest that with low-educated adults dialogue is a more suitable method for self-reflection that text-based inventories etc. methods. The results from Jyväskylä showed that learning attitudes are highly positive also among the older workers and that workers are aware of their learning needs, as much as of their job competence and the strengths in it. However, the competence of older workers was often seen in a rather taken for granted manner. Therefore the focus was on what they can give and contribute to workplaces and its development rather than in their personal developmental needs and how to identify them and support them. WORKTOW interventions succeeded to enhance the awareness of the management in the latter area. The Employee Development Schemes that were studied by Lancaster University, benefited the older workers in different ways as described earlier in this report in the summary chapter from the learning interventions. Also the vocational training courses for adults that the WRI observed in their part had a favourable outcome. One of the macro conditions that may help the integration of older people in these programmes was the increased political focus on these issues. Also the Jyväskylä partner referred to these relationships. The results from WRI and Lancaster suggested that successful vocational training have potential of making older workers more motivated for learning in later life and for strengthening their self-confidence. A central issue in participation in learning and training interventions, however, especially to competent, highly experienced and therefore often critical older workers/learners are the consequences of the workplace or for the individual from the participation. According to our results these consequences and transfer of learning are paid very little attention to in the SMEs.

Group level. The findings showed that in a workplace collective job competence (knowledge, skills and attitudes) was as important as the competence of individuals. Furthermore, awareness of the collective competence seemed to be an important element in one's individual competence. Whether intended and systematically organised, people work and learn together in workplaces by sharing their competence to maximize the outcomes of their work. We also found strong inter-generations solidarity from workplaces in competence sharing. Social environment can be very important in supporting learning in work-settings but can also be distracting and a hindrance to it when problems arise. However, we found that relatively little systematic attention has been paid to group processes and social forms of learning at work in SMEs. Our findings also gave evidence of how work-based training with the participation of older workers may improve the social climate in groups of mixed ages. Management was not always aware of or attentive to the differences in attitudes towards work or learning when organising learning activities at the work place.

Organisational level. The data from Lancaster suggested that learning opportunities for older workers were not a direct function of negative attitudes or a supportive management. The quality of work had a greater impact. The results from Jyväskylä showed that while older workers reported positive learning attitudes, the employers' views concerning these tended to be less positive. Further contradictions in the views of employees and employers were found concerning possibilities for learning in the workplace. While the employers' emphasised equal opportunities and an absolute employee initiative and activity with regards to learning/training participation, the employees tended to describe these opportunities in less positive terms. However, employers in the SMEs in Finland tended to highly value the competence of older workers, and univocally underlined that age as such is not an issue in the workplace or in competence development, but much more importantly the personal characteristics.

Our data suggests that the competence and readiness of the management to "manage" and support the learning and development in SMEs play at least as, if not more central role in developing learning organisations than the attitudes among employees. Management and trade union leaders have an important role in encouraging the older workers to join education programmes and training. In terms of training resources, however, the managers described the situation in SMEs rather problematic: when there are financial resources for training investments, there is not time for it, and vice versa. This situation is also an indication of a lack of long-range and systematic planning of competence development in SMEs. A general conclusion from the Finnish interventions was that learning and competence development are not too "visible", not too much on the agenda, in SMEs. Therefore, one of the greatest values of the kind of intervention that was carried out, was in an awareness raising among management, both concerning learning and competence development, and the specific situation of workers in different career-development phases in these companies.

The relationship between changes and learning in the workplace appeared somewhat contradictory. On one hand higher pressure and workload were generally reported to reduce the opportunities for older workers to learn informally or to participate in formal training. On the other hand it was by and large these changes that stimulated to new learning and made it a necessity for the employees. Results from Norway and UK indicate that constant excessive changes and radical restructuring may have a negative impact on the attitudes of older workers to their own learning abilities.

On the need to develop a more holistic approach to flexibility and productivity of and social cohesion among the workforce

The increasing diversity of workforce as well as the continuous and rapid changes in working life call for more comprehensive approaches to develop dynamic, functional and inclusive learning environments. The WORKTOW interventions showed that basically the most functional and successful interventions developed from the point of view of older workers and lifelong learning have all the same elements as more generally targeted successful interventions. This line of thinking welcomes and supports the emerging development of a broader and more complex line of thinking of the factors related to work performance in Europe. Overall well being in workplaces seems to be a core issue also in terms of learning, competence development and productivity. According to this rationale a worker's overall well-being may become threatened if she or he does not feel confident with his or her job competence.

The overall goal for HRD in workplaces is to have a staff, which has high productivity through competence and well being. HRD initiatives, training and learning interventions and stimulation are traditionally considered as investments in human capital. Taking the above described line of thinking as a starting point, HRD initiatives, on one hand, can be viewed as indications of an interest into an overall well-being at the workplace as well as a contribution to it. The same holds for human resource management (HRM) activities more generally. Thus, on the other hand, investments in the overall well-being among the employees in the workplace, potentially contribute to the productive output among the employees, in that they have a positive impact on the grounds for full use of one's potential competence. The results of this study have confirmed earlier findings suggesting that age as such is a poor indicator of job performance and productivity (Warr, 1998) and that variations within an age group tend to far exceed the average differences between age groups (OEDC Employment Outlook, 1998).

The more holistic approach to HRD and HRM, albeit still very new, is gaining foothold particularly in the Nordic countries, but also more broadly in Europe. The governments in the Nordic countries have targeted various regulation and support to health and environmental issues in working life. The ultimate goal of this line of thinking is to contribute to productivity, and the link in between is job competence. As mentioned earlier in this report there are various programmes and legislation enhancing workplace well-being, targeted exclusively to occupational health, or to working-life development more broadly, or to specific occupational groups. Examples of the new, integrative way of thinking have emerged recently within occupational health, building on concepts, such as 'working capacity' (http://www.stm.fi/english/current/ageprog/working.htm) or 'workability' (Ilmarinen, 1999). An integrated or contextual approach has been specifically adopted in many programmes targeted to the older workers to address their situation in working life. The most prestigious of these programmes are SENIOR 2005 - *Äldrepolitik för framtiden (Old age policy for the future)* in Sweden, *National Programme for Ageing Workers 1998-2002* in Finland, and *Nasjonalt Krafttak for Seniorpolitikk i Arbeidslivet (National "Power Lift" for Senior Policy in Working Life) 2001-2005* in Norway. Within Europe a broad approach to workplace well-being is indicated for example in the work of the European Agency for Safety and Health (State of Occupational Safety and Health in The European Union – pilot study, 2000). This survey pointed out to several major emerging risks for well-being in working life. The most central of these risks were related to such issues as changes in working patterns (the way work is organised and structured), particularly sensitive groups (young workers under 18 years of age, and older workers), and psycho-social aspects (stress, tight time-frames, anxiety, and violence). While traditionally focus in job-related well-being has been in physical issues, the changes in working life and work have brought along a new focus on more mental and psycho-social well-being, including the central role management play in these issues, as well as the consequences these issues potentially have for job competence and productivity.

Policy implications

Policies at the European and national levels

Policies at the European and national levels should aim to:

- *Raise awareness of older workers and their value in working life.* Age-discriminating attitudes still persist in European working life and are observed as barriers to the learning of older workers. Such an awareness-raising should underline in a balanced way the strengths in older workers' job competence as well as the areas in need for development.
- *Initiaitives to counteract the deterioration of working conditions.* The negative trend that is documented in the European surveys on working environment is likely to affect the learning opportunities and should be monitored and acted upon.
- *Educational initiatives should be developed which create and strengthen learning opportunities and support for older workers and real lifelong learning.* In many European countries major changes in adult education have taken place, as well as lifelong learning has been the guiding principle in developing educational policies. However, the situation of older workers rarely explicitly addressed in this context, although the obsolete and lacking competence of this part of workforce is frequently referred to. More focus on and support to participation should be addressed both in the level of basic education and continuous vocational training to improve their learning environment and to strengthen their ability to update themselves. ICT is a central are to be addressed in these initiatives. There is a clear correlation between high level of initial education and participation in training during late professional career. Therefore it is important that national and European educational policies towards the practice of lifelong learning support provisions for upgrading these basic skills.
- *Concerted efforts should be continued to reverse the lowering of retirement age and improvement of the labour market position of older workers in the European countries.* Supporting age-management in companies is one area where more efforts should be made to support this goal.
- *Join efforts towards attitudinal change needed.* On the basis of the findings from WORKTOW we believe that efforts made to acknowledge and accredit the competence of older workers in workplaces in a balanced way with their developmental needs are key issues, not least because of the attitudinal approach it underlines. Feeling of insecurity and defensiveness on the part of employees in their late career appears understandable in a generally discouraging cultural environment (e.g. views of older workers as only having obsolete skills or as lacking new knowledge) in workplaces as well as in society. Therefore, it is important to focus on launching more positive and encouraging attitudes in these efforts. One step already taken in this direction in many parts of Europe is acknowledging the value of experience-

based competence and informal learning in workplaces.

- *Promote and support diversity in working life.* The benefits of intergenerational communication and cooperation towards increased productivity should be highlighted and incorporated in national policies of working life changes. For smaller companies the risk of investing in employees is generally quite high compared to larger companies. National policies should aim to lower this expenditure or extend the horizons for return.
- When developing national policies in Europe to support flexible arrangements between work and retirement greater attention should be paid to synergies between personal interests in work, leisure and training. Our studies have illustrated the fruitfulness of taking the interest of employees in late career as a point of departure for personal development and for updating work skills.

Policies at the level of branches and companies

- *Initiatives to integrate of diversity-sensitivity among workforce in management policies and practice.* There is a need to develop sensitivity as well as accreditation of workforce diversity as a "natural" part of company policies and not a one-time initiative to improve working conditions. WORKTOW has showed that diversity can be and is a great collegial asset in workplaces, but its utlisation could still be enhanced by a more systematic and focused approach and efforts. This kind of approach includes designing work places and learning environments with age and experience differences as a success criteria.
- *Systematic and experience-adjusted programs of training and competence development.* Since older workers are less likely to be active learners, there should be systematic effort to support and motivate them for updating and personal development. Sensitivity towards workforce diversity should be addressed and mobilised in the design of work organisations and training systems.
- *Incentive systems, which support the learning and competence development among older workers should be created.* There should be methods to identify the contingencies that motivate and reward employees in late professional life to participate in training and learning. Generally speaking, very little attention is being paid to the consequences of training (knowledge transfer) to the workplace.
- *Policies and practices of diversity needed in expertise, related to new organisational forms (e.g. network- and project production).* The findings from the WORKTOW project give evidence that the competence of older workers is functional in flexible organisations. Those practices need to be described in greater detail and on a generalised basis.
- *Efforts needed to enhance knowledge exchange and creating trough intergenerational communication and cooperation.* Increased interest in knowledge management as sharing of "silent" expertise should acknowledge the give and take between younger and older, or between the freshly trained and highly experienced workers.
- *Inclusive organisational development needed.* Change processes in working life are too often carried through in a hectic way. One potential negative implication is that older workers feel not in control of or excluded from the situation. They should be given the chance and support to actively participate in such restructuring and other change processes.
- *Support needed to learning around new technologies inclusing senior employees.* The stereotypes and negative self-images of older workers are often expressed in situations where new technology is introduced at company level. It is quite crucial to be aware of these relationships and find methods and practices that will include and empower this age group in such processes.
- *Increasead awareness of learning styles and strategies needed.* The current developments in working life require new competence from personnel management in the area of managing learning-related issues in the workplace context. The understand-

ing of learning styles and strategies, and how they vary by age and learning histories should be reflected in human resource development policies.

- *Encouragement to older workers to design their careers and opportunities to act accordingly.* Since work organisations and careers are becoming more and more boundaryless, older workers should be encouraged to design their personal careers – by combining the need for flexible practice and social and employment security.

Implications for research strategies and agendas

Educational action research in European working life. Action research projects that are intended to improve learning environments in companies should be part of larger research and development coalitions that have a longer time span than two or three years.

Developing methods to integrate older workers in learning organisations. There are some anecdotal evidence of "good practices" from European working life, but the methods and practices of integration have not been validated on a broader scale and through longitudinal studies.

Diversity of competences and flexible organisations. Studies should be undertaken to map the use of different expert roles in new organisations like networks, projects, virtual organisations. A focus should be put on life phases and biographies.

New career patterns in late professional life. There is little empirical research available that throws light on flexible career trajectories in late professional life.

Age differences in the mastery of information and communication technology. There is surprisingly little research on how the revolution in information and communication technology affects the learning environment of different age groups in workplaces.

Development of learning and teaching methods suitable for low-educated and older workers. The guidelines for teaching employees in late career are usually deduced from general models of experiential learning. A more differentiated approach should be based on empirical studies of didactic methods for this target group.

Learning style and age differences. In the WORKTOW-project explorations were conducted about learning style characteristics of older female employees with low formal training. These research themes should be extended to new groups and validated in relation to a variety of learning situations and institutional contexts.

V Dissemination and exploitation of results

WORKTOW project and its results have attracted reasonable attention in media. Project dissemination started from the press releases from the participating institutes. A press conference was arranged at the University of Jyväskylä, Finland, during the first project meeting. The WORKTOW group of researchers has actively participated in scientific conferences and given papers during the lifetime of the project. A reasonable amount of articles have been written and published in scientific, professional and popular journals. List of publications is attached below. Project Managers have participated in practice level and policy making in national and European settings within WORKTOW thematics. Several partners have also had doctoral studens involved in the project.

Databases

The following two databases are available from WORKTOW project:

1. Questionnaire data from the employees (N=378).
The data includes information on company, type of work, individual background, work complexity and learning opportunities, participation in training, consequences of training, learning culture, and self-directed learning.

2. Questionnaire data from the employers and management (N=37).
The data includes information on company, type of work, individual and organisational background, organisational changes, HRM and training, work complexity and learning opportunities, and learning culture.

Both databases are in SPSSX format. Variable lists are also available. Inquiries should be addressed to Tarja Tikkanen (see contact information at the end of this report).

A list of WORKTOW publications & conference presentations

Danielsen, K. & Serk-Hansen, Chr. (2000) Companies in change: A report from modern working life. (Original title in Norwegian: Bedriftet i endring: En rapport fra det moderne arbeidslivet). *Søkelys på Arbeidslivet,* 17, 2, pp 105-113.

Danielsen, K. & Serk-Hansen, Chr. (2000) About selling confidence. Paper presented at the Aniversary Conference of the Norwegian Antrophological Society, Lillehammer, May 13.-14.

Danielsen, K.& Serck-Hansen (in press). Om tillitt og salg av forsikringer. Sosiologisk Tidsskrift.

Iversen, S., Lauvdal, T., Lahn, L.C. & Eikeland, O. (2000) Livsfasetilpasset personalpolitikk. Rapport 5/2000. Oslo: Arbeidsforskningsinstituttet/Work Research Institute. (Lifephase adapted personnel policy).

Kujala, S. 1997. Advocacy and older people – situation in Finland. Paper presented in the first European Conference on Advocacy and Older People 23-24 October, 1997 Dublin, Ireland.

Kujala, S. 1998a. Koulutus, opiskelu ja vanhuuden elämänvaihe [Training, learning and old age]. Jyväskylän Ikääntyvien yliopisto [Jyväskylä University of the Third Age], Elämänkokemuksesta tietoon ja oppimiseen (ETAPPI) -projektin julkaisu [A publication from the ETAPPI-project *From life experience to knowledge and learning*], 10 pp.

Kujala, S. 1998b. Attitudes towards older workers and their learning. Paper presented at the ESREA research seminar on Older Learners 2-4 July, 1998 Budapest, Hungary.

Kujala, S. 2000. Vanhempien työntekijöiden koulutettavuus ja oppiminen [Learning and trainability of older workers]. A paper presented at the Nordic conference on Adult Education, *Forskning i Norden*, 25-27 May, 2000. Nordens Folkliga Akademi, Gothenburg, Sweden..

Lahn, L.C. 2000. Ikääntyvät oppijat oppivassa yhteiskunnassa [Ageing learners in a learning society]. In P. Sallila (Ed.) Oppiminen ja ikääntyminen (Learning and ageing). The Finnish yearbook of adult education research. Kansanvalistusseura ja Aikuiskasvatuksen tutkimusseura, pp. 41-72.

Lahn, L. C. 1998. Tacit professional knowledge and the learning environment of adult workers. In Tøsse, S. et al. (Eds.) *Corporate and non-formal learning. Nordic Yearbook of Adult Education*. Trondheim: Tapir.

Lahn, L., Tikkanen, T., van der Hejden, B. & Thijssen, J. 1998. Competence and training of older workers. EuroWork Age. DG-V, European Commission.

Paloniemi, S. & Tikkanen, T. 2000. Victims of ageist attitudes – But how do the older workers themselves view their competence? Paper presented in ESREA conference Adult Education and the Labour Market VI. 19-22 October, 2000, Seville, Spain.

Paloniemi, S. 2001. Employees conceptualising their job competence and ageing. Poster presentation in the Nordic Ergonomics society 33rd Annual Congress. September, 2001 Tampere, Finland.

Parkatti, T., Kauppi, M. & Tikkanen, T. 2000. Age, health and competence in working life. Education and Ageing, 15 (1), 11-22.

Serck-Hansen, C. (in print) Tillit og mistillit. Tidskrift for norsk samfunnsforskning.

Tikkanen, T. 1998a. Learning and education of older workers. Lifelong learning at the margin. Jyväskylä Studies in Education, Psychology and Social Research 137. University of Jyväskylä.

Tikkanen, T. 1998b. The age-participation relationship revised: Focus on older workers. Adult Education Quarterly 49(1), 15-27.

Tikkanen, T. 1999a. Kompetens genom livslångt lärande – En förutsättning för kvalitet i arbetslivet. Paper presented at the national conference *Ett arbetsliv för alla ålder*. 1.6.1999. Stockholm, Sweden. (*Invited speaker*)

Tikkanen, T. 1999b. Education and training for older workers. Paper presented at the international conference Active Strategies for an Ageing Workforce. 12-13.8.1999. Turku, Finland. (*Invited speaker*)

Tikkanen, T. 1999c. Learning and competence of older workers. Paper presented in the Expert Seminar on Work Transformations and Ageing Workers. 15.-16.3.1999. Jyväskylä, Finland.

Tikkanen, T. 2000a. Experiencing the changes brought by IT and their consequences. In S. Tøsse et al. (Editorial Committee) Reforms and policy. Adult education in Nordic countries, Trondheim: Tapir, pp. 161-182 .

Tikkanen, T. 2000b. Older Workers In Finland. Part I: Policy initiatives. A report to the Sentre for Seniorplanlegging, Oslo (June 2000). 13 pages. (Unpublished)

Tikkanen, T. 2000c. Older Workers In Finland. Part II: Research and practice. A report to the Sentre for Seniorplanlegging, Oslo (November 2000). 44 pages. (Unpublished)

Tikkanen, T. 2000d. Teknologian muutos työssä oppimista siivittämässä pk-yrityksissä (Change in technology lending wings to learning in SMEs). Hyvä Ikä – Kansallisen ikäohjelman tiedotuslehti, 3/2000. (Information Bulletin of the National Age Programme)

Tikkanen, T. 2000e. Learning culture and self-directed learning in SMEs. Paper presented in ESREA conference Adult Education and the Labour Market VI. October 19-22, 2000, Seville, Spain.

Tikkanen, T. 2001. Learning interventions in SMEs. A paper presented at the *9th Annual Int'l Conference on Post-Compulsory Education and Training*. 3.-5. December, 2001, Gold Cost, Australia.

Tikkanen, T. 2001. Learning at work in technology intensive environments. In Proceedings to the *II Int'l Conference on Researching*

Work and Learning. 26.-28.7.2001. Faculty of Continuing Education, University of Calgary, Alberta, Canada, pp. 493-500.

Tikkanen, T. 2001. Informal learning at work. A paper presented at the Nordic conference on Adult Education, *Forskning i Norden*, 28-30.5.2001. Oslo, Norway.

Tikkanen, T. & Kujala, S. 2000a. Pk-yritysten ikääntyvät työntekijät ja koulutus [Older workers and their training in SMEs]. In P. Sallila (Ed.) Oppiminen ja ikääntyminen (Learning and ageing). The Finnish 41. Yearbook of adult education research. Kansanvalistusseura ja Aikuiskasvatuksen tutkimusseura, pp. 73-97.

Tikkanen, T. & Kujala, S. 2000a. Older workers and training in SMEs. A paper presented at the Nordic conference on Adult Education, *Forskning i Norden*, 25-27.5.2000. Nordens Folkliga Akademi, Gothenburg, Sweden.

Withnall, A. Understanding the Learning Styles of Older Adults. Adults Learning (submitted in August 2000).

WORKTOW-related seminars

University of Jyväskylä arranged a national seminar around WORKTOW project and its results: *Work Transformations and Ageing Workers. An Expert Seminar on Utilising Experience and Developing Job-competence.* University of Jyväskylä, Finland, March, 1999.

University of Jyväskylä/WORKTOW organised a Nordic seminar on training and development of the ageing workforce jointly with the regional (Central-Finland) Project on Working Condition (TYÖKUNTO) (ESF) "Health, Age and Competence in Working Life".

Work Research Institute arranged a national seminar jointly with the Programme *Working Life, Ageing and Life Course* (YAL), June 17, 1999.

A list of WORKTOW deliverables

Work Package 1 - Project management and project evaluation

Work Package 2 - Conceptual development and operationalisation of research questions
Deliverables:
D2.1 - Note on literature update
D2.2 - Note on conceptual development
D2.3 - Internal deliverable on research questions

Work Package 3 - Institutional and cultural context of the labour market position and participation in learning of older workers.
Deliverables: (completed)
D3.1 - Institutional and cultural context of the labour market position and participation in learning of older workers

Work Package 4 – Research design
Deliverables:
D4.1 - Methodological note on field studies
D4.2 - Methodological note on intervention studies
D4.3 - Selection of cases in the WORKTOW project

Work Package 5 - Field studies
Deliverables:
D5.1 – Field studies: Documentary and background data
D5.2 – Field studies: Personal and group interviews
D5.3 – Field studies: Systematic observations
D5.4 – Field studies : Outcomes of the questionnaire data

Work Package 6 - Learning interventions
Deliverables:
D6.0 – Learning interventions – Introduction
D6.1 – Learning interventions as individual reflection on learning style (Keele)
D6.2 – Learning interventions based on Employment Development Schemes (Lancaster)
D6.3 – Learning interventions as action research with broad developmental assessment (JYU/NVI)
D6.4 – Learning interventions as evaluation and data feedback of dialogic practices and career development (NOVA)
D6.5 – Learning interventions as participatory analysis of learning practices and career patterns (WRI)

D6.6 – Learning interventions - Methodology and results

D6.7 – Note on educational interventions in SMEs to enhance learning opportunities for older workers

Work Package 7 - Analysis of Learning Interventions

Work Package 8 - Dissemination of results

Country reports

Tikkanen, T. 2001. Learning intervention as action research with broad developmental assessment. WORKTOW Partner report from the University of Jyväskylä, Finland. Unpublished. In English. 36 p.

Acknowledgements

WORKTOW project was supported with national funding in Finland and Norway. We wish to acknowledge the Academy of Finland for providing Research Assistant to the help in coordination of the project, The Finnish Ministry of Education for supporting the organising of the semi-national seminar *Work Transformations and Ageing Workers. An Expert Seminar on Utilising Experience and Developing Job-competence*, and the Ministry of Social and Health Affairs for funding the sub-study *Workplace learning among the older workers* to WORKTOW under the National Programme for Ageing Workers. The study by the Norwegian partners has been supported nationally by the Ministry of Health and Social Affairs, and the Ministry of Work and Administration, for which we wish to express our gratitude, too. We wish to acknowledge the assistance of all the older employees and employers/ management in the 27 SMEs that participated to our study and the learning interventions. Finally we wish to thank the Research Liasion Officer, Mrs. Sirkka-Liisa Korppi-Tommola, at the University of Jyväskylä, Finland because she kindly informed the WORKTOW-coordinator-to-come of the call for proposals under the IV framework in TSER.

WORKTOW partners and their addresses

University of Jyväskylä, Finland & Norwegian Institute of Adult Education (NVI), Norway[7] - Coordinator

Contact: Dr. Tarja Tikkanen, VOX, Nedre Bakklandet 60, N-7014 Trondheim, Norway. – Tel. 47 – 73 99 08 40. Fax: 47 - 73 99 08 50. E-mail: tarja.tikkanen@vox.no

or

Ms. Susanna Paloniemi, Department of Education, University of Jyväskylä, P.O.Box 35, FIN-40351 Jyväskylä, Finland. Tel. 358 – 14 – 260 1680, Fax. 358 – 14 – 260 1661. E-mail: supaloni@edu.jyu.fi

Keele University, UK

- Contact: Dr. Alexandra Withnall, Department of Social Policy and Social Work, University of Warwick, Coventry, CV4 7AL, UK. – Tel. 44 – (0)24 – 765 73 851. E-mail: A.Withnall@warwick.ac.uk

Lancaster University, UK

- Contact: Prof. Keith Percy, Department of Continuing Education, Lancaster University, Lonsdale College, Bailrigg, Lancaster LA1 4YN, UK. – Tel. 44 – 1524 – 59 26 20. E-mail: k.percy@lancaster.ac.uk

Norwegian Social Research, NOVA, Norway

Contact: Mr. Kolbein Lyng, NOVA, Munthesgt. 29/31, N-0260 Oslo, Norway. – Tel. 47 – 22 54 12 00. Fax: 47 - 22 54 12 01. E-mail: kly@isaf.no

Work Research Institute, Norway

Contact: Ass. Prof. Leif Chr. Lahn, University of Oslo, P.O. Box 1092, N-0317 Oslo, Norway. – Tel. 47 – 22 85 70 760. Fax: 47 - 22 85 42 50. E-mail: l.c.lahn@ped.uio.no

---

[7] The project coordination was transferred to NVI, Norway, in July 1999, as the Project Manager Dr. Tikkanen moved to work there.

References

Active Strategies for an Ageing Workforce, 1999. Dublin: European Foundation.

Ageing Population and Technology: Challenges and opportunities, 1998. ETAN working paper to the DGXII, European Commission.

Appelbaum, E. & Batt, R. 1994.The new American workplace.Transforming work systems in the United States. Ithaca, NY: ILR Press.

Argyris, C. & Schön, D. 1996. *Organizational learning*. NY:Addison-Wesley.

Arthur, M.B. & Rousseau, D.M. 1996. *The boundaryless career.A new employment principle for a new organizational era*. New York: Oxford University Press.

Aspin, D. & Chapman, J. 2000. "*Lifelong learning: concepts and conceptions*" International Journal of Lifelong Education, 19, 1, 2-19

Baracat, B. and Marquie, J. C. 1994.Training the middle-aged in new computer technology: a pilot study using signal detection theory in a real-life word-processing learning situation. In J. Snel & R. Cremer (Eds). *Work and aging*. London:Taylor & Francis.

Beattie, A. 1997.Working People and Lifelong Learning:A Study of the Impact of an Employee Development Scheme. Leicester: NIACE.

Beauchesne-Florival, M-N. 1990. New technologies and the ageing of labour force: Background and impact of company cultural models. In J. Habib & C. Nusberg (Eds.) Rethinking worklife options for older persons. Jerusalem: JDC-Brookdale Institute of Gerontology and Adult Human Development & Washington, D.C.: International Federation on Ageing, 131-148.

Billett, S. 2001. Learning in the workplace. Allen & Unwin.

Billett, S. & Boud, D. 2001. Participation in and guided engagement at work:Workplace pedagogic practices. In Conference Proceedings to the 2nd Int'l Conference on Researching Work and Learning. Calgary, Canada, July 26-28, 2001, pp. 321-328.

Bjørnåvold, J. 1997.Assessment of non-formal learning: the quality and limitations of methodologies. *The European Journal Vocational Training*, 3, 12, pp. 52-67.

Bjørnåvold, J. 2001.Assessment of non-formal learning: Link to strategies for lifelong learning. In D. Colardyn (Ed.) Lifelong Learning: Which ways forward? Bruges: College of Europe. pp.73-86.

Blomqvist, I., Koskinen, R., Niemi, H. & Simpanen, M. 1997.Aikuisopiskelu Suomessa [Adult Education in Finland]. Education 4/1997. Statistics Finland. Helsinki.

Boreham, N.C., Shea, C.E. & Mackway-Jones, K. 2000. Clinical risk and collective competence in the hospital emergency department in the UK, Social Science & Medicine 51, pp. 83-91.

Brunstein, I. 1995a. Introduction. In I. Brunstein (Ed.) Human Resource Management in Western Europe. Berlin:Walter de Gruyther, pp. 1-6.

Brunstein, I. 1995b.Europe and its human resources in the context of worldwide competition:The emergence of a paradoxical dilemma. In I. Brunstein (Ed.) Human Resource Management in Western Europe. Berlin:Walter de Gruyther, pp. 309-338.

Butler, J. 2001. Evaluating organisational change: The role of learning paradigms. In Conference Proceedings of the II International Conference on Researching Work and learning. July 26-28, 2001, Calgary, Canada, pp. 345-353.

Ceci, S. 1990. *On intelligence... More or less. A bio-ecological treatise on intellectual development.* Prentice Hall, New Jersey.

Chaiklin, S. & Lave, J. 1993. *Understanding practice. Perspectives on activity and context.* New York: Cambridge University Press.

Charness, N. 1990. Implications of technological changes for Canadian workers. In J. Habib & C. Nusberg (Eds.) Rethinking work-life options for older persons. Jerusalem: JDC-Brookdale Institute of Gerontology and Adult Human Development & Washington, D.C.: International Federation on Ageing, 181-192.

Cleveland-Innes, M. & Potvin, B. L. 2001. Curriculum in the workplace: Beyond collaborative design to shared praxis. In Conference Proceedings of the II International Conference on Researching Work and Learning. July 26-28, 2001, Calgary, Canada, pp. 354-362.

Colardyn, D. (Ed.) 2001. Lifelong learning: Which ways forward? Brugge: College of Europe.

Coy, M. (Ed.) 1989. *Apprenticeship.* Albany, NY: State University of New York Press.

Craik, F.I.M. & Jennings, J.M. 1992. In Craik, F.I.M. & Salthouse, T.A. (Eds.) *The Handbook of Aging and Cognition.* Hillsdale, NJ: Erlbaum. pp. 51-110.

Czaja, S. 1996. Aging and the acquisition of computer skills. In Rogers, W.A., Fisk, A.D. & Walker, N. (Eds.) *Aging and skilled performance.* Mahwah, NJ: Erlbaum. pp. 201-220.

De Fillippi, R.J. & Arthur, M.B. 1996. Boundaryless contexts and careers: A competency-based perspective. In M. B. Arthur & D. M. Rousseau (Eds.) *The boundaryless career. A new employment principle for a new organizational era.* NY: Oxford University Press.

Day, N. 1998. Informal learning. Workforce, 77 (June), pp. 30-35.

Delgoulet, C., Marquie, J. C. & Escribe, C. 1997. Training of older workers: Relationship between age, other trainee characteristics and learning anxiety. In Å. Kilbom, P. Westerholm, L. Hallsten & B. Furåker (Eds.) Work after 45? Arbete och Hälsa, 1997:26.

Development of operations and competence in small organisations. 2000. Follow-up of the EU growth potential. Malmö University, Lund University, Kristianstad University & Swedish University of Agricultural Sciences.

Docherty, P. 1996. *Läroriket – vägar och vägval i en lärande organisation.* Solna: Arbetslivsinstitutet.

Dreyfus, H. L. & Dreyfus, S. E. 1986. Mind over machine. New York: Free Press.

Edwards, R. 1998. Flexibility, reflexivity and reflection in the contemporary workplace. International Journal of Lifelong Education, 17 (6), pp. 377-388.

Ellström, P.E. 1996a. *Arbete och lärande. Förutsättningar och hinder för lärande i dagligt arbete (Work and learning. Preconditions for and barriers to learning in everyday work).* Solna: Arbetslivsinstitutet.

Ellström, P.E. 1996b. *The many meanings of occupational competence and qualification.* Paper presented at Workshop 1 within the project New Forms of Basic and Further Education of Professionals for Vocational Education and Training (EUROPROF), Hydra, Greece, 25-27 April, 1996.

Engeström, Y. 1996. Developmental work research as educational research. *Nordisk pedagogik,* 16, 3, 131-143.

Engeström, Y. & Middleton, D. 1996. *Cognition and communication at work.* Cambridge: Cambridge University Press.

Eraut, M., Alderton, J., Cole, G. & Senker, P. 1998. Learning from other people at work. In F. Coffield (Ed.) Skill formation. Bristol: Policy Press.

Eraut, M., Alderton, J., Cole, G. & Senker, P. 1999. The impact of management on learning in the workplace. In F. Coffield (Ed.) Speaking truth to power. Bristol: Policy Press.

Firth, D. & Goffey, L. 1997. Employee Development Schemes: the benefits of participation for employees in small firms. London: Department for Education and Employment.

Forsberg, P. & Olofsson, G. (Eds.) 1993. *Den äldre arbetskraften och arbetsmarknaden*. Lund: Sociologiska Institutionen.

Froman, L. 1994. Adult learning in the workplace. *Interdisciplinary handbook of adult lifespan learning*. Westport, Conn.: Greenwood Press.

Gardener, M.K. & Sternberg, R.J., 1994. Novelty and Intelligence. In Mind in Context, R. J. Sternberg & R. K. Wagner (Eds.), Cambridge University Press, U.S.A.

Gavigan, J. P. 2000. *The learning imperative for Europe's ageing workforce.* http://www.jrc.es/pages/iptsreport/vol38/english/FUT1E386.htm.

Gil, S., Allesch, J. & Preiss-Allesch, D. 1994. *Improving SMEs access to training: Strategies for [illegible]cess. A report on best practice in EC Member States*. Berlin: CEDEFOP.

Gould, R. 1996. Pathways of early exit from work in Finland in a period of high unemployment. Paper presented at the International Scientific Conference Work after 45? Stockholm, 22-25 September, 1996.

Grimsmo, A. & Hilsen, A. I. 2000. Arbeidsmiljø og omstilling. Working Life Research Institute (AFI) Papers nr. 7. [In Norwegian]

Gustavsen, B. 1992. Dialogue and Development. Theory of communication, action research and the restructuring of working life. Assen/Maastricht: Van Gorcum & The Swedish Center for Working Life.

Gustavsen, B. 1996. Concept-driven development of work life. Assen: Van Gorcum.

Haarotyan, R.A. 1990. Older workers and technology. In J. Habib & C. Nusberg (Eds.) Rethinking worklife options for older persons. Jerusalem: JDC-Brookda-le Institute of Gerontology and Adult Human Development & Washington, D.C.: International Federation on Ageing, 165-180.

Hall, D.T. 1986. Career development in organisations. San Francisco: Jossey-Bass.

Hall, D.T. & Mirvis, P. H. 1995. The new career contract: Developing the whole person at midlife and beyond. Journal of Vocational Behaviour, 47, pp. 269-289.

Hayslip, B., Miller, C., Beyerlein, M.E., Johnson, D., Metheny, W., Yeatts, D. 1995. Employee age and perceptions of work in self-managing and traditional work groups. *International Journal of Aging and Human Development*, 42(4), 291-312.

Heijden van der, B. I. J. M. 1998. The measurement and development of professional expertise throughout the career. Enschede: University of Twente.

Heijden van der, B. I. J. M. & Thijssen, J. 1998. Interventions made at company level and by individual workers. In L. Lahn, J. Thijssen, T. Tikkanen, & B. van der Hejden. 1998. *Competence and training of older wor kers*. Action Research report to the project Re-integration of older workers into the labour market. Driekant & DGV, European Commission, pp. 24-36.

Hein, I. 1998. Tieto- ja viestintätekniikka elinikäisen oppimisen apuna. Tieto- ja viestintätekniikka opetuksessa ja oppimisessa. [ICT supporting lifelong learning] Part report 4. Sitra 192. Helsinki

Hirsch, P.M. & Shanley, M. 1996. The rhetoric of *boundaryless* – or, how the newly empowered managerial class bought into its own marginalization. In M. B. Arthur & Rousseau, D. M. (Eds.) *The boundaryless career. A new employ-*

ment principle for a new organizational era. NY: Oxford University Press.

Hofstede, G. 1984. *Culture's consequences: international differences in work-related values*. Beverly Hills, Cal.: Sage.

Holm, G. 1994. Older employees' participation in organizational and technological changes - experience from a company undergoing changes. In J. Snel & R. Cremer (Eds) *Work and aging*. London: Taylor & Francis.

Honey, P. & Mumford, A. 1986. Using your learning styles. Maidenhead, Peter Honey.

Honey, P. & Mumford, A. 1992. The manual of learning styles (revised version). Maidenhead, Peter Honey.

Ilmarinen, J. 1999. Ageing workers in the European Union. Helsinki: The Finnish Institute of Occupational Health, Ministry of Social and Health Affairs, Ministry of Labour.

James, D.T. D. 1996. Older people and new technology. Education and ageing, 11 (2), pp. 15-29.

Juuti, P. 2001. Ikäjohtaminen [Age-management]. JTO-studies no. 13. FEMDI-Services Ltd.

Järvinen, A. & Poikela, E. 2001. Modelling reflective and contextual learning at work. In Conference Proceedings to the 2nd Int'l Conference on Researching Work and Learning. Calgary, Canada, July 26-28, 2001, pp. 420-427.

Kananoja, T. 1993. Muuttuvat taidot [Changing skills]. In A. Heikkinen & U. Salmi (Eds.) Puheenvuoroja käsityön ja ammattikasvatuksen filosofiasta. Tampereen yliopiston täydennyskoulutuskeskuksen julkaisuja A 3. University of Tampere.

Kelley, C.L. & Charness, N. 1995. Issues in training older adults to use computers. *Behavoiur and information technology*, 14, 2, 107-120.

Kilbom, Å. (Ed.) 1997. Nordic Research on the Elderly Workforce. TemaNord 1997: 570. Copenhagen: Nordic Council of Ministers.

Kirjonen, J. 1994. Työelämän kehitystrendit. Muuttuva työ ja ikääntyvä ihminen. In J. Kuusinen, E. Heikkinen, P. Huuhtanen et al. (Editorial Committee). Ikääntyminen ja työ [Ageing and work]. Helsinki: WSOY & The Finnish Institute of Occupational Health, pp. 110-127.

Knights, D. & Willmott, H. 2000. The Reengineering Revolution. Critical studies of corporate change. Sage: London

Kolb, D.A. 1976. Learning Style Inventory: Technical Manual. Englewood Cliffs, NJ: Prentice Hall

Krogh, G. von, Nonaka, I. & Nishiguchi, T. (Eds.) 1999. *Knowledge Creation. A Source of Value*. Houndmills: Macmillan Press Ltd.

Kuhn, K., Taylor, P., Lunde, Å., Mirabile, M-L. & Reday-Mulvey, G. 1998. Career planning and employment of older workers. Action Research report to the project Re-integration of older workers into the labour market. Driekant & DGV, European Commission.

Kuittinen, M. & Kekäle, J. 1996. Oppivan organisaation kulttuuri [The culture of a learning organisation]. Psykologia, 31, pp. 182-190.

Lahn, L.C. 1993. *Tid og arbeid på universitetet*. Arbeidsforskningsinstituttet/Work Research Institute

Lahn, L.C. 1996. *Aldring og arbeidsmiljø*. Oslo: AFI-notat 4/96, Arbeidsforskningsinstituttet/ Work research institute.

Lahn, L.C. 1999. *Livsløp, yrkeskompetanse og arbeidsmiljøutvikling*. Oslo: AFI-rapport 5/99, Arbeidsforskningsinstituttet.

Larson, A. 1992. Network dyads in entrepreneurial settings: A study of the governance of exchange relationships. *Administrative science quarterly*, 37, 76-104.

Launis, K. Niemelä, A-L. Engeström, Y. & Kantola, T. 2001. Työyhteisöt vanhan ja uuden murroksessa [Workplace communities in the transition between old and new]. Paper presented at the conference Et arbeidsliv – hele livet. 10.-11. October 2001, Oslo, Norway.

Lawrence, B.S. 1996. Organizational age norms: Why it is so hard to know one when you see one? *The gerontologist*, 36, 2, 209-220.

Linkola, P. 1998. Kasvanut epävarmuus vaikeuttaa työn kokemista mielekkääksi. Unpublished manuscript to the National Age Programme.
Linkola, P. 1999. Age-management. A paper presented at the Expert Seminar on utilising experience and developing job-competence, Work Transformations and Ageing Workers, 15-16 March, 1999. University of Jyväskylä, Finland.

Lyng, K. 1999. Holdninger til eldre arbeidstakeres læringsevne. Oslo: NOVA (In Norwegian).

Löfström, E. & Pitkänen, M. 1999. Kummina vai keinutuolissa? Ikääntyvät työntekijät pk-yrityksissä. (Older workers in SMEs) Final report to the AGENT-project. Report nr. 20. Vantaa Institute for Continuing Education. University of Helsinki.

Merllie, D. & Paoli, P. 2000. *Ten Years of Working Conditions in the European Union. Summary.* Dublin: European Foundation for the Improvement of Living and Working Conditions.

Merson, M. 1996. Education, training and the flexible labour market. *British journal of Education and Work*, 9, 2, 17-29.

Mirabile, M. L. 1998. Introduction to the main results of the research conducted in the four countries: Finland, Italy, Spain and Sweden. In the final report to the porject *"Over 45. Causes of dismissal and the role of lifelong learning"*. IESS-AE, in cooperation with the EC, pp. 19-32.

Mirkin, B.A. 1987. Early retirement as a labour force policy: An international overview. Monthly Labour Review, 110(3), 19-33.

Mulligan, J. & Griffin, J. (Eds.) 1992. *Empowerment through experiential learning.* London: Kogan Page.

Nasjonalt krafttak for seniorpolitikk i arbeidslivet [National action plan for senior policies within working life], 2001. Senter for Senior Planlegging [Norwegian Centre for employment policy for the over 45']. http://www.seniorpolitikk.no/

National actions to implement lifelong learning in Europe. 2001. Survey 3, CEDEFOP & Eurydice. European Commission.
National Skills Task Force, 2000. Third Report of the National Skills Task Force. Tackling the adult skills gap and the role of workplace learning. Produced for the DfEE.

Nonaka, I. 1996. The knowledge creating company. In Starkey, K. (Ed.) How organizations learn. London: International Thomson Business Press.

Nordhaug, O. 1991. The shadow educational system. Adult resource development. Oslo: Norwegian University Press.

Nordisk kartlegging om landenes parallelle initiativer knyttet til realkompetanse. 2001. TemaNord 2001:530. FOVU, Nordisk Ministerråd.

Norwegian Labour Market 2001. Ministry of Labour and Government Administration. http://odin.dep.no/aad/engelsk/publ/rapporter/002021-990014/index-dok000-b-n-a.html#1.3

NOU 19:1998. Fleksibel pensjonering (Flexible retirerement). Finansdepartemantet (Ministry of Finances).

OECD Employment Outlook 1998. OECD.

Older workers in the Labour Market and outside, 2000. National Programme on Ageing Workers. Implementation Report 1999 by an Expert Group. Ministry of Health and Social Affairs & Ministry of Labour. Labour Administration Publications.

127

Onstenk, J. 1992. Skills needed in the work place. In Tuijnman, A.C. & Van der Kamp, M. (Ed.) *Learning across the lifespan; theories, research, policies*. Oxford: Penguin Press, pp.

Ornstein, S. & Isabella, L.A. 1993. Making sense of careers – a review. *Journal of management*, 19, 2, 243-267.

Paoli, P. 1997. *Second European Survey on Working Conditions*. Dublin: European Foundation for the Improvement of Living and Working Conditions.

Pfeffer, J. 1983. Organizational demography. In L. L. Cummings, & B.M. Staw (Eds.) *Research in Organizational Behavior, vol 5.* Greenwich, CT: JAI Press.

Porter, M.E. 1990. *The competitive advantage of nations*. NY: Free Press.

Prochaska, J.O & DiClemente, C.C. 1994. *The Transtheoretical Approach: Crossing Traditional Boundaries ofTherapy.* Malabar, Fla.: Krieger.

Rantanen, J. & Lehtinen, S. 1998. Tietoyhteiskunta, terveys ja työ [Information society, health and work]. Sitran julkaisuja 164. http://www.sitra.fi/tietoyhteiskunta/suomi/st121/sitra164.htm.

Rasku, A., Feldt, T. & Ruoppila, I. 1997. Esimiesten työ, työympäristö ja hyvinvointi vuosina 1987 ja 1996 [Supervisors' work, work environment, and well-being in the years 1987 and 1996]. Reports from the Department of Psychology 335. University of Jyväskylä. [In Finnish]

Reichborn, A.N., Pape, A. & Kleven, K. 1998. *Papir på egen dyktighet. Dokumentasjon av realkompetanse fra arbeidslivet (Certificate of competence. Documentation of real competence from working life)*. Oslo: Fafo-rapport 245, FAFO.

Royer, J. M. 1979. Theories of the transfer of learning. Educational Psychologist, vol. 14, pp. 33-41.

Rundle, S. & Dunn, R. 1999. The BE Adult Learning Style Inventory. Pittsford, NY: Performance Concepts International

Salanick, G. R. & Pfeffer, J. 1978. A social information processing approach to job attitudes and task design. Administrative Science Quarterly, 23, 224-253.

Salthouse, T.A. 1996. The processing-speed theory of adult age differences in cognition. *Psychological review*, 103, 403-428.

Schneider, G. 1994. Ageing societies: *Problems and prospects for older workers*. Geneva: World Labor Report 1995. ILO Office.

Schön, D.A. 1983. *The refelective practitioner.* London: Temple Smith.

Schumann, M. 1998. New concepts of production and productivity. *Economic and industrial democracy*, 19, 17-32.

Sharit, J. & Czaja, S.J. 1994. Aging, computer-based task-perfmance, and stress – issues and challenges. *Ergonomics*, 37, 4, 559-577.

Snyder, W. M. & Cummings, T. G. 1998. Organization Learning Disorders: Conceptual Model and Intervention Hypotheses. *Human Relations*, 51(7), 873-891.

The State of Occupational Safety and Health in the European Union – Pilot Study, 2000. Summary report. European Agency for Safety and Health Work.

Stenberg, M. 2000. Tiedosta osaamiseen Ikääntyvien tietoyhteiskuntavalmiuksien ennakointia [From knowledge to competence. Anticipating the readiness of older workers to information society]. Lahden tutkimus- ja koulutuskeskus. Raportteja ja selvityksiä 34. University of Helsinki.

Sterns, H.L., Barett, G.V., Czaja, S.J & Barr, J.K. 1994. Issues in work and aging. *The journal of applied gerontology*, 13, 1, 7-19.

Straka, G.A. 1990a. The impact of technological change on employment for older persons from a West-German perspective. In J. Habib & C. Nusberg (Eds.) Rethinking work-life options for older persons. Jerusalem: JDC-Brookdale Institute of Gerontology and Adult

Human Development & Washington, D.C.: International Federation on Ageing, 149-164.

Straka, G. A. 1997. Self-directed learning in the world of work. *The European Journal Vocational Training* , 3, 12, pp. 83-88.

Thång, P-O. 1997. From skills to competence in industry. LifeLong Learning in Europe, 1, pp. 25-30.

Tikkanen, T. 1997. Consequences of unemployment on professional competency. Paper presented at the Nordic Conference on Adult Education. 26.-27.5.1997. Trondheim, Norway.

Tikkanen, T. 1998a. Learning and education of older workers. Lifelong learning at the margin. Jyväskylä Studies in Education, Psychology and Social Research 137. Doctoral Dissertation Thesis. Jyväskylä University.

Tikkanen, T. 1998b. The age-participation relationship revised. *Adult Education Quarterly*, 49(1), 15-27.

Tikkanen, T. 1998c. Contemporary issues and future challenges in participation of older workers in training. In L. Lahn, J. Thijssen, T. Tikkanen, & B. van der Hejden. 1998. *Competence and training of older workers.* Action Research report to the project Re-integration of older workers into the labour market. Driekant & DGV, European Commission, pp. 7-16.

Tikkanen, T. 2000a. Older Workers in Finland. Part I: Policy initiatives. A report to the Centre for Senior Planning, Oslo (June 2000). To be published by the National Age Programme, Ministry of Labour, Finland.

Tikkanen, T. 2000b. Older Workers in Finland. Part II: Research and practice. A report to the Centre for Senior Planning, Oslo (November 2000). To be published by the National Age Programme, Ministry of Labour, Finland.

Tikkanen, T. 2001. Learning at work in technology intensive environments. In Proceedings to the *II Int'l Conference on Researching Work and Learning*. 26.-28.7.2001. Faculty of Continuing Education, University of Calgary, Alberta, Canada, pp.

Tikkanen, T. 2002. Employers' and Employees' Views on Learning Culture in SMEs. A paper to be presented at the 9th International ECLO Conference *Delivering Learning in the Workplace - When the Learning Organisation becomes a Knowledge Factory.* May, 2002. Amsterdam, The Netherlands.

Tikkanen, T., Valkeavaara, T. & Lunde, Å. 1996. The ageing workforce and lifelong learning: An organizational perspective. Education and Ageing, 11(2), 100-114.

Tillaart van den, H., Berg van den, S. & Warmerdam, J. 1998. Work and learning in microenterprises in the printing industry. Synthesis report. Thessaloniki: CEDEFOP.

Torp, H. & Mastekaasa, A. 1990. Mobilitet, eksterne og interne arbeidsmarkeder. In H. Torp & K. H. Skollerud (Eds.) *Organisasjon, arbeidsmiljø og mobilitet.* Oslo: Institutt for Samfunnsforskning.

Unseem, M. 1993. The impact of American business restructuring on older workers. *Perspectives on Aging*, 26, 2, 12-14.

Vianen van, A. E. M. 1997. A social information processing perspective on transfer of attitudes towards continued training. Applied Psychology, 46(4), pp. 354-359.

Vygotsky, L. 1978. *Mind in society*. Cambridge, Ma.: Harvard University Press.

Walker, A. 1996. Work after 45 – a sociological perspective. Paper presented at the conference Work after 45?. National Institute for Working Life. Stocholm, 22-25 September 1996.

Walker, A. 1997. Combating age barriers in employment. European Research Report. Dublin: European Foundation.

Walker, A. 1998. The over 45 project in the European Context. In the final report to the project *"Over 45. Causes of dismissal and the role of lifelong learning"*. IESS-AE, in cooperation with the EC, pp. 7-15.

Warr, P. 1995. In What Circumstances Does Job Performance Vary With Age? *In European Congress of Work and Organizational Psychology* . OSV.

Warr, P. 1998. Age, competence and learning at work. In Å. Kilbom (Ed.) *Ageing of workforce. Arbetslivsrapport 1998:24*. Solna: National Institute for Working Life.

Weick, K. & Berlinger, L. 1989. Career improvisation in self-designing organizations. In M.B. Arthur, D. Hall & B.S. Lawrence (Eds.) *Handbook of career theory*. NY: Cambridge University Press.

Young, M. 1993. A curriculum for the 21st Century? Towards a new basis for overcoming academic/vocational divisions. *British Journal of Educational SOtudies, 41, 3.*

Zuboff, S. 1988. In the age of teh smart machine. The future of work and power. Heinemann Professional, NY.

This report is the result of a three-year European study (WORKTOW) which sought to examine how older workers (aged 45+) cope in a working environment undergoing constant change. In particular, it was one of the first studies to focus in any depth on learning and training for this sector of workforce.

While most HRD literature has been concerned with issues pertaining to larger companies, WORKTOW concentrated on the opportunities and challenges observed in small and medium sized enterprises.

The study showed that the situation of older workers employed in SMEs is actually more favourable than might have been anticipated on the basis of the strong negative stereotyping to which they have often been subjected. They appear to participate in learning in the workplace in the same ways as their younger colleagues and are generally seen as a valuable resource. However, it was also found that employers sometimes hold ambiguous views of older workers and their learning activity and often, awareness of the need for investment in HRD is poor or non-existent.

Yet this study provides encouraging evidence concerning the returns on investment in learning and development for older workers in the form of increased commitment and motivation to learn as well as an improved social climate in groups of 'mixed-age' workers. Accordingly, the report challenges training providers to consider new and more appropriate methods for this particular group of learners.

Oslo
VOX Voksenopplæringsinstituttet
Olaf Helsets vei 5,
Postboks 6139 Etterstad, 0602 Oslo
Telefon: 23 38 13 00

Trondheim
Forskningsavdelingen
Nedre Bakklandet 60, 7014 Trondheim
Telefon: 73 99 08 40
Telefaks: 73 99 08 50

VOX
Voksenopplæringsinstituttet

U.S. Department of Education

Educational Resources Information Center (ERIC)

Reproduction Release Form

For each document submitted, ERIC is required to obtain a signed reproduction release form indicating whether or not ERIC may reproduce the document. A copy of the release form appears below or you may obtain a form from the Clearinghouse. Please mail two copies of your document with a completed release form to:

ERIC Clearinghouse on Adult, Career, and Vocational Education

Acquisitions Coordinator

1900 Kenny Road

Columbus, OH 43210-1090

If you have any questions about submitting documents to ERIC, please call 1-800-848-4815, ext 47642 or e-mail <chambers.2@osu.edu>.

ERIC REPRODUCTION RELEASE FORM

I. Document Identification

Title:	Working Life Changes and Training of Older Workers
Author(s):	Tarja Tikkanen, Leif Christian Lahn, Alexandra Withnall, Peter V
Date of Publication:	July 2002

II. Reproduction Release

A. Timely and significant materials of interest to the educational community are announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE). Documents are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS) or other ERIC vendors. Credit is given to the source of each document. If reproduction release is granted, one of the following notices is affixed to the document.

Level 1

"PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY:

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Level 2A

"PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY HAS BEEN GRANTED BY:

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)." **Level 2B**

"PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY:

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)." Note: The above lines do **NOT** have to be signed by the person submitting the document. A signature is required below to place the document in the database if it is accepted.

B. If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign the release.

☑ Permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) *and* paper copy **(Level 1)**.

☐ Permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only **(Level 2A)**.

☐ Permitting reproduction and dissemination in microfiche only **(Level 2B)**.

Documents will be processed as indicated provided quality permits. If permission to reproduce is granted, but no box is checked, documents will be processed at **Level 1**.

C. "I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated. Reproduction from the ERIC microfiche or electronic media by persons other that ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for nonprofit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquires."

Name: Ragnhild Lofthus

Signature: Ragnhild Lofthus

Organization: The Norwegian Institute for Adult Education

Position: Head of the Department of Research and Development

Address:
Nedre Bakklandet 60
Trondheim
Norway

Zip Code: N - 7014

Telephone No: + 47 - 73 99 08 40

Fax: + 47 - 73 99 08 50

E-mail: vox@vox.no

Date: 17. September 2002

III. Document Availability Information

(Non-ERIC Source)

If permission to reproduce is not granted to ERIC, or, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor: VOX jointly with the European Commission

Address:
Nedre Bakklandet 60
N-7014 Trondheim
Norway

Price Per Copy: NOK 225 plus NOK 50 for postage (about EURO 30 plus

Quantity Price: None

IV. Referral to Copyright/Reproduction Rights Holder

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:

Address:

Zip Code:

(9/97)